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REVIEW OF THE NOMENCLATURE
OF SOUTH AFRICAN BIRDS

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INTRODUCTION

DURING the present century so many changes have been effected in the nomenclature of African birds that the majority of ornithologists can hardly find their way through the maze. It seems desirable, therefore, that these changes should be collated, and in doing so I have found so great a need for effecting further changes, that are bound to become necessary in the course of time, that I make no apology for what must appear to many as a terrible upheaval. To anyone who has followed the trend of ornithological work during the last few years, I have no doubt that the expression of my views will specially appeal, and perhaps be productive of further research upon the same lines in reference to the rest of the avifauna of this continent. The method followed hereafter is not a new one and the changes are not so great as they may appear at first sight, but they have the advantage of bringing the classification of our birds into line with that of other countries, such as North America and Australia, where the nomenclature is adapted to facts and not prejudiced by side issues. Before entering into the review itself, a short discussion becomes necessary in order to clear the way.

The most recent work devoted exclusively to this region is that of the late Dr A. C. Stark, which was completed after his death by Mr W. L. Sclater. It was arranged according to the Catalogue of Birds in the British Museum, which followed the *Stricklandian Code*, and was completed before the British ornithologists had decided to take the 10th instead of the 12th editions of Linné's *Systema Naturae* as the starting point of our system of nomenclature. About the same time as this work on South African birds was appearing, Reichenow published his monumental work on the birds of Africa (*Die Vögel Afrikas*), in which he followed the generally accepted rules to start from the 10th edition of Linné's work, strict adherence to

priority, original spelling of generic names and the adoption of subspecies under trinomials. Immediately after the last volume on the *Birds of S. Africa* had been completed by Sclater (in 1905), he published a *Check List*, in which a few additions and emendations appeared, but taken as a whole, the nomenclature remained the same. In 1910, Dr J. W. B. Gunning and Mr (now Dr) A. K. Haagner published another *Check List*, in which they followed the system and nomenclature of Reichenow. In 1896, the late Captain Shelley started a beautiful work on the *Birds of Africa*; but at the time of his death in 1910, only five volumes in six parts had appeared; another part was subsequently completed by Mr W. L. Sclater, but the work as a whole is still incomplete. In 1899, the late Dr Sharpe started his *Handlist of Genera and Species of Birds* and completed this by 1910. In all of these publications there is seen a divergence of views and a consequently different application of names to both genera and species, and to anyone who wishes to criticise the methods I have followed and the number of changes effected, I would refer these works for comparison of the names in use. Reichenow's work is perhaps the most consistent where species are concerned; but his conception of what are genera does not appeal to one's reason, since above all things consistency can alone bring about uniformity, and Reichenow has simply lumped together a number of species which are similar in appearance, without regard to the important characters of structure. Reichenow is not alone in following this method, and I do not criticise him in particular, but mention his work merely in illustration of where the system of nomenclature has recently been at fault. In Britain and in Europe this method of "genus lumping" (as it has come to be called) is still prevalent; but in North America ornithologists have been more consistent and have pursued a progressive policy ever since they undertook the classification of their own birds, so that today we find in the monumental work of Dr R. Ridgway (*The Birds of North and Central America*) a consistent recognition of the genera, of which few contain many species. If we read back into the history of ornithological classification, we find that, from the days of Linné onwards, more and more genera came to be recognised, up to about the time when Darwin wrote his first great works on the evolution of species. Darwin's theory raised the hostility of the systematists, and although latterly it came to be recognised that this theory had come to stay, there still remained a tacit opposition to the methods recommended by Darwin, to study the minutest details both in the laboratory and the field, and we find most important characters being thrust aside as though they had little value to the progress of knowledge. This method of omitting important characters may not have had its origin in actual opposition to the theory of evolution; but the accumulation of material may have involved so much labour that the primary necessity was to get this material catalogued, and cataloguing came to be regarded as the primary need. Without some grounds to work upon, it is no easy matter to follow the evolution of species, since the worker must have a personal knowledge of the countries and habits of the species before he can hope to arrive near the truth; and I have no doubt that this has to a large extent prejudiced workers in Europe against the introduction of this theory, as it was well nigh impossible to understand how the characters of the species of Africa were affected by their environment when judged by the

standard of environment prevailing in Europe. Ridgway, in his work above-mentioned, has acknowledged that evolution is an accepted fact, and it is no doubt because of this that his work marks so great a progress. In Britain and Europe, however, we still hear voices raised in query as to whether evolution really is a truth, and hand in hand with this we find "genus lumping"; it is also to be noted that these questioners believe that genera are merely a "convenience," and from this we must presume that they cannot find time to investigate. It is safe to say that if these systematists who believe in taking the line of least resistance could be induced to examine the material they handle with a little more care, taking note of all the differences between the species or individuals and noting whence the specimens came, it would not be long before they acknowledged the truth of evolution. Science cannot tolerate prejudice which has its origin in laziness, and if present workers cannot shake off this shackle, the future generation will do so, so that it is useless to disclaim against the "inconvenience" of recognising many genera in birds.

Soon after starting my work in the Transvaal Museum, it became apparent to me that there was something lacking in the current text-books on birds, and as time progressed I found the solution in the lax way in which the genera were allocated. Soon after, I was pleased to note that another worker had made the same discovery, namely Mr G. H. Mathews, who started a great work on the *Birds of Australia* in October, 1910, taking the nomenclature in current works for granted as correct; but as his labours progressed we find a gradual change taking place in succeeding volumes as it became more and more obvious that the generic arrangement of the species was not a natural one, until at last he found it necessary to make wholesale changes. He has shown so clearly the advantage of "genus splitting" that one marvels how the systematists of Europe and Great Britain can still be content to move along in the old course; yet they still do so, and the classification of the birds of Europe, Asia and Africa is still behind the times in consequence. I sincerely hope, however, that this order of things will be changed and we shall find prejudices giving way to the production of better work. The main argument that genera are merely a matter of convenience cannot be taken seriously, as those who hold this view still retain innumerable generic names that might quite well be relegated to synonymy if the argument be carried to its logical conclusion; and the argument that according to the arrangement of the "genus splitters" every species at once becomes a genus is no better, since we must take into account the potentiality of many species to traverse great distances, so that we cannot expect to find many species amongst such genera, though there are often many amongst the local birds that are incapable of travelling far.

It was my intention to publish a long introduction to show my reasons for coming to the conclusions hereafter given, but the review and most important part of this paper has become so lengthy that I have decided to curtail this and give merely an abstract. I have been guided to a large extent by the obvious way in which the species in families naturally fall into groups, some of which are distributed over the small area of South Africa, others over the continent and others again over the whole universe. In studying these groups one becomes impressed with a number of features

that go to prove how vast a period is covered by the existence of birds as a class, and in contemplation of the problems which this involves one cannot avoid the conclusion that it is a want of sagacity in distinguishing between the age of the groups that many workers have been led astray. The diet of the species is the main factor in the evolution of species, especially the diet at the breeding season, since it is not only essential to their existence, but around it revolve other factors, such as the adaptations to procure it, distribution according to its prevalence, the action of physical environment in accord with the habits and distribution of the species, and the effect of the food itself upon their disposition may profoundly affect their development and attainment to secondary characters which become very important. The permanence of the diet must profoundly conduce to the establishment of specific characters, and conversely where the diet is uncertain there do we find less definite limits to the groups. Examination of this factor in detail will I am convinced produce more enlightenment than any other; but the effect of physical environment, apart from diet, cannot be ignored. Distribution is the key to the solution of many problems which have upset the proper arrangement of the minor groups; but I do not consider that strict isolation is so essential to the separation of species as some recent writers would have us believe, though naturally where isolation becomes effective, the result of permanent divergence comes about, provided there are other factors which will cause divergence. I firmly believe that the preponderance of certain factors tending to produce certain characters under one condition of environment will, in the course of time, result in those characters becoming dominant and the species becoming isolated. Where two different conditions of environment are adjacent, the facility for the individuals occupying them to interbreed is greater than when a species is distributed over a wide area in which there is a gradual transition from one condition of environment to another which differs in slight degree; consequently it is to be expected that when a division of the individuals inhabiting two adjacent conditions of environment takes place, the line of demarcation is likely to become more pronounced, and in fact, if these species are interbred we are less likely to get fertile progeny than if we were to interbreed geographical species that had come about by isolation alone. This must, I think, constitute a strong argument in favour of genus splitting; but on the other hand geographical genera also become established in the course of time and assessment of their status then only becomes possible by the criterion of the differences to be observed in allied genera which occur side by side. This will, of course, raise the argument that all species by this arrangement become at once genera; but that this is not so is shown by the fertility of the hybrid progeny of pheasants which have been brought together from distant localities; in their respective localities they are clearly defined species, not subspecies as some taxonomers would have us take them to be, subspecies in its true meaning being a species in transition and without definite limits. I believe that less offence will be given by recognising the criterion of the frequent occurrence of allied species side by side during the breeding season for genera and less frequent occurrence, or during the breeding season of one only, of allied species side by side for subgenera, as we have not yet pursued this line of reasoning sufficiently far to establish the principle.

I am of opinion, however, that one is quite as much entitled to generic rank as the other, and recognise some subgenera merely in order to smooth the way. It was my original intention to give a considerable amount of illustration to show how characters of species have changed under conditions of environment; but this is rather too long for the present paper and I have therefore given only a few, such as will be found in the Serins, Pipits, and a few others. It will be seen after perusing the discussion of the Pipits, for example, that one cannot be guided by either structural or colour differences as to the true relationship of the species, for we find very distinct groups having the same structural characters in one respect, but not in others, and on the other hand species which would seem to have originated from different stocks have come to look extraordinarily alike. And we find the same thing wherever we turn, the branches of the genealogical tree being involved in an almost inextricable tangle. We cannot in the present state of our progress of knowledge merely allow these deep questions to pass unheeded, and the first step towards answering them is to compel more attention to matters of detail in the specimens in the laboratory and the details in habits of the species. Moreover, a narrow purview will only hamper endeavour to find a solution to the problem of evolution, and every factor will have to be considered. As regards classification itself, therefore, some facts must be emphasised that taxonomers are apt to forget: (1) That the dead specimens do not always exhibit at first sight the fundamental difference between the species, such as voice, by which the species are able to recognise those of their own kind. (2) That species are guided to those of their kind by sight as well as voice, and that consequently colour markings are often more persistent than the differences in structure that come about by adaptations. (3) That, despite what some authors would have us believe, the manner of flight or ability to traverse great distances differs in the species from a great many causes and that the shape of the wing and tail, and even more so the number of feathers, are of great importance to ornithological taxonomy. (4) That although the great majority of species are guided in procuring their food by sight, the nasal organs are frequently an adjunct and consequently we find this reflected in the shape of the external nasal characters. (5) That differences between the sexes are important, and comparisons of species should always be made with due regard to the difference. (6) That age is important, albeit that the majority of species do not change much when once they have reached the adult state; comparison of immature specimens has its utility in reference to the phylogeny of the species, but it is only the characters of adults that should be admitted for the correct diagnosing of species. (7) That in view of the permanence in size of the majority of species after they have become adult, the use of the foot-rule should be encouraged, since science is measurement and it would be possible by the accurate application of this measure to identify any species; but naturally the drabness of investigation which the absolute adoption of this measure would entail is not a pleasing prospect and it need not therefore be reduced to refinement. Many authors seem to think that it is sufficient to give only the wing measurement; but when the whole question is investigated it is seen that this is of only partial utility, and it would serve a better purpose to add the other dimensions that are easily taken, such as of the tail, tarsus and bill, and even the relative length

of the quills. (8) That all structural characters must have had their origin in some "cause" (despite what may be argued to the contrary when the "cause" is not immediately apparent) and the greater the number of hypotheses advanced to explain such developments, upon the bases of correlated observations, the better for science. Latterly there has been much discouragement to anyone bringing forward such hypotheses, owing to the spirit of antagonism which seems to be so deeply rooted in the nature of man; but such antagonism can have its origin only in the narrowness of mind of those who are incapable of absorbing anything new, and should be ignored if it adds nothing fresh to build upon. (9) That cataloguing of names is the elementary need of science but not its final objective, so that the cataloguing of names should be adjusted to the progress of science, not be permitted to govern it. (10) That although we may be able to point to certain characters as being correlated with certain habits, it would be impossible to come to such conclusions without a foreknowledge of the habits of the species, and we must consequently start and conduct our research by acquiring an intimate knowledge of the habits of the species, first in our neighbourhood and subsequently abroad, as there is nothing which narrows the point of view more than basing our conclusions upon what is observed in one area alone. Birds are so widely distributed as species on account of their power of flight that even the very local species have at one time or another in the course of their evolution passed through very different conditions of environment; as compared with mammals, say, only the very local species of birds can be viewed in the same light.

In view of what has been said above, some disappointment may be felt at the brevity of some of the diagnoses given hereafter. I may therefore state that this is only a preliminary review of the state of the nomenclature of our birds as we find it today, the detail being left to a greater work in the future. It may perhaps also be argued from the arrangement followed that nearly all our species represent genera; but it will be observed that in many cases I have not applied subgeneric terms, as I cannot gauge the feeling of workers abroad as to what should be considered genera and subgenera, and the subgenera I have named in order to emphasise the necessity for the most careful investigation. There are other species in most of the South African genera; but these have not always been mentioned on account of the poverty of the descriptions in literature and specimens not being available.

Having said this much, I shall now proceed to the main subject of this paper.

CHANGES IN THE NOMENCLATURE OF SOUTH AFRICAN BIRDS EFFECTED BY VARIOUS AUTHORS AND HERE DECIDED UPON

PHASIANIDAE

The generic arrangement of the African phasianids as it stands at present is far from satisfactory and needs revision. The following genera are readily recognised in structure, habits and call-notes, with the exception of *Pternistis* and *Chaetopus*, which are closely allied, differing mainly in the former having a nude patch of skin on the throat.

Pternistis Wagler, genotype *P. afer* Muller, differs from all other African genera in the character of the bare patch on the throat, for which reason alone it has been kept separate; otherwise it is characterised by having the membrane over the nostrils extended in a broad band across the base of the culmen; males usually with two pairs of spurs; size, large, as compared with the other genera except *Chaetopus*; sexes much alike, except that males are rather larger and have spurs. Members of the genus are shy, skulking in dense, coarse vegetation on the borders or in more open patches of forests. Their call note is loud and crowing, sounding something like "kwaarie," repeated a number of times, at first loud and slow, then more rapidly as it decreases in volume, and usually repeated again at intervals; when disturbed they utter a clucking note, and when flushed often rise with a shriller alarm cackle. Their presence is most usually disclosed by the crowing notes uttered early in the morning or late in the evening. When flushed with dogs they usually take refuge in a heavily foliaged tree, where they are most difficult to locate. Two groups of species, differing mainly in colour characters, may perhaps have to be recognised in subgenera.

With regard to species, Neumann (*Journ. f. Orn.* 1920, p. 76) has shown that *P. nudicollis* Boddaert, which was commonly applied to the Knysna bird, is a synonym of *P. afer* P. L. S. Müller, and applies therefore to the Kaffrarian Red-necked Francolin the name of *P. krebsi*. In 1911 Gunning and I described *P. castaneiventer* from Fort Beaufort and the neighbouring districts (*Ann. Transvaal Mus.* III. 110) for the form which commonly occurs there, stating in doing so that the series contained fully adult males with long spurs; yet despite this statement Sclater (*Bull. Brit. Orn. Cl.* XLI. 135) makes the extraordinary statement that "It is difficult to believe that *Pternistes castaneiventer*...can be anything but a young example of this species" (*i.e.* *P. afer krebsi*), at the same time ignoring the fact that if this were so, *castaneiventer* has prior claim by nine years. It is strange, but true, that a black breasted form occurs both at Knysna and along the Drakensberg, with the more chestnut breasted form intervening between these areas; but how this is to be explained remains to be shown when longer series are secured, few collections containing sufficient to prove much. Sclater in the same place puts all the dark-breasted species together as subspecies of *P. afer*; but it is clear that proof of merging of *castaneiventer krebsi* into *humboldti* and both these into *afer* is still wanting and the procedure is as arbitrary as the rejection of the name of *castaneiventer*. Specimens from Chirinda, Beira and Coguno are referred by him to a new subspecies, *P. afer swynnertoni*, but information as to what adults from Tette (the type locality of *P. humboldti*, which was based upon an immature female) may be like is not proven and they may well be identical with the birds from Beira. The Transvaal Museum possesses two adult males and an adult female from Boror and an adult male and a female not yet adult of what we have taken to be *P. humboldti*, and all of these with the exception of the last female have the middle of the lower breast uniform black, which is so very different from the Drakensberg and Cape Province birds that there seems to be no reason for keeping them under the same species; but the Boror birds vary so much in the amount of white on the sides of the naked throat patch, face and superciliary stripe that this can hardly

be regarded as of even subspecific value in the species. The two from Beira have a broader white superciliary stripe, as stated in the description of *swynnertoni*, but evidence as to whether this is a constant feature in the southern birds or not is still wanting, and we must have more definite information as to what the true *humboldti* is like before accepting this new arrangement. It is a great pity that Mr Sclater, with his great facilities for the production of sound conclusions, should so dislocate the classification of these birds in the way he has done.

Chaetopus Swainson, genotype *C. bicalcaratus* (Linné), differs from *Pternistis* only in having the throat feathered, habits of members of the genus being very similar, and both genera being also known to the colonists as "pheasants." Three distinct species are recognised within our limits, namely, *C. capensis*, *C. natalensis* and *C. adspersus*, each occupying certain parts of the country.

Peliperdix Bonaparte, genotype *P. lathamii*, differs from *Chaetopus* in that the sexes are quite distinct in the colour of the underparts of the body, the males without true spurs and of about the same size as the females, and the species much smaller. One species of the genus has been recorded from within our limits, namely, *P. hartlaubi* (Boc.), taken by Lieut. C. G. Finch-Davies at Otavifontein (cf. *Ann. Transvaal Mus.* v. 256, 1917).

Dendroperdix gen. nov., genotype *Perdix sephaena* A. Smith, differs from the preceding in not having the membrane over the nostrils extended in a broad band across the base of the culmen, and in general appearance and habits is otherwise so different that there should be no hesitation in recognising it; the sexes are alike in colour, but the males are larger and have a large sharp spur. Members of the genus frequent forests and to one acquainted with its call-notes there is never any difficulty in identifying them. The nasal operculum is more elongate than in other genera, situated high up, and the shape of the primaries differs from that of the two following genera, in which the second outermost is more emarginate. There are two distinct species within our limits, namely, *D. sephaena* in the "bushveld" districts and *D. rovuma* (formerly known as *kirki*, as to which see C. Grant, *Ibis*, 1915, p. 12) on the coast belt of the lower Zambesi valley. W. L. Sclater (*Ibis*, 1912, p. 38) has recorded *D. granti* from Tette; but it would seem from his notes thereon that the record should refer to *D. sephaena zambesiensis* Mackworth-Praed (*Bull. Brit. Orn. Cl.* XL. 139, 1920), though the latter writer does not say so. From specimens in the Transvaal Museum collection it seems that this small Zambesi form of *D. sephaena* occurs southwards to the Barberton district.

Ortygornis Reichenbach, genotype *O. pondicerianus* Gmelin, differs from the preceding in having the nostrils almost concealed by an ovate superior membrane, which is also not connected over the base of the culmen, an entirely different style of colour and general appearance, small size, males differing from females in the colour of the head and possessing a pair of sharp spurs. The call-notes are very distinctive, something like "swempie" repeated several times, whence the native and common colloquial name; and also a shrill crowing note sometimes uttered that sounds something like "Che che che che-che-che-che." Only one species occurs within our limits, though possibly another form will be found to occur in the Zambesi valley, evidence as to which has not yet been forthcoming, the only record

being from Boror just beyond our limits. Other species of the genus occur in the north beyond our limits, and the genotype in southern Asia. Their habitat is open country with trees scattered about, or even open forest.

Scleroptila Bonaparte, genotype *S. levaillanti* Val., differs from all the preceding in having the nostrils situate closer to the head and with short feathers on the operculum, which is rounder in shape; in appearance, habits and call-notes, members of this genus are also quite readily differentiated from other genera. They occur in quite open country in fairly large coveys, which, when flushed, scatter about and later call to each other, uttering a note something like "Perrie-pirrie" repeated three or four times. Four species occur within our limits, two sometimes occurring in the same localities when their common habitats overlap, namely *S. levaillanti* from the southern districts of the Cape Province northwards on the east to Zoutpansberg and Transvaal highveld, overlapping *S. gariiepensis* of the west in the southern Transvaal, *S. shelleyi* on the east from Natal northwards, and *S. afer*, which is distributed from the extreme south northwards on the east along the Drakensberg to the south-eastern part of Transvaal. The fourth species, *S. jugularis pallidior* (Neumann, *Bull. Brit. Orn. Cl.* XXI. 44, 1908), occurs in our north-western region.

It will thus be seen that I do not include the genus *Francolinus*, in which all our species have been placed (except *Pternistis*), as it differs in some respects from all of them, coming nearest perhaps to *Peliperdix*.

NUMIDIDAE

Numida papillosa transvaalensis Neumann (*Orn. Monatsb.* 1899, p. 26) described from Rustenburg district, and *N. papillosa damarensis* Rbts (*Ann. Transvaal Mus.* VI. 2, 1917) from Windhuck, should be added to our list. The typical *N. papillosa* Reichenow was described from the neighbourhood of Lake Ngami.

Guttera lividicollis Ghigi (*Mem. Ac. Sci. Instit. Bologna*, VI. Pl. II, 1905) described from the upper Zambesi and *G. edouardi symonsi* Rbts (*l.c.* p. 3, 1917) from Karkloof, Natal, should be added to our list. Since describing the last I have learned from the collector that there is no red on the bare skin of the throat and the form thus becomes a subspecies of *G. lividicollis*. It is extremely doubtful whether the type of *G. edouardi* was collected at Durban by Verreaux, as all records of specimens from Natal go to show that they have no red on the throat, and moreover many of Verreaux's records have subsequently proved to be wrong. Most likely it came from somewhere up the eastern coast towards Zanzibar.

PTEROCLIDAE

If we are to regard *Pteroclorus* Bp. as distinct from *Pterocles*, we must also recognise the generic status of other species. *Pterocles* Temm., genotype *P. orientalis* L. (cf. Hartert, *Nov. Zool.* XXIV. 284, 1917), has sixteen tail feathers, in which respect *Pteroclorus* and *Pterocles bicinctus* are the same; but "*Pterocles*" *variegatus* (Burchell) has only fourteen tail feathers and should therefore be separated without further question, and I therefore propose to place it in a new genus, CALOPTEROCLES. In *Pterocles bicinctus* Temm. the middle tail feathers are not longer than the rest, in the typical *Pterocles* slightly longer, and in *Pteroclorus namaquus* very much longer;

in addition to these differences, the typical *Pterocles*, which would include our *P. gutturalis*, is very much larger (wing length well over 200 mm.), *P. bicinctus* is intermediate in size (wing about 175 to 185 mm.) and *Pteroclorurus* smallest (wing about 165 mm.), or of about the same size as the very distinct *Calopteroles variegatus*. In colour characters the three are equally distinct, and all in all I see no reason why *Pterocles bicinctus* Temminck should not have equal status with *Pterocles* and *Pteroclorurus* as a distinct genus, for which I give the name of NYCTIPERDIX, making that species the genotype, characterised as stated above.

On the eve of sending this review for publication, a number of the *Bulletin* of the British Ornithological Club has come to hand (Vol. XLII. No. CCLXVI.) in which Sclater has made several important amendments in the classification of the *Pteroclididae*. He finds that *Pteroclorurus* is a synonym of *Pterocles*, and places *Pterocles* of authors in a new genus, *Eremialector*, type *Tetrao orientalis* L. My conclusions arrived at above therefore remain in substance. He has also pointed out, at the instance of Mr T. Iredale, that *Tetrao variegatus* Burchell is preoccupied and this species is therefore re-named *Pterocles (Eremialector) burchelli*, which is therefore the genotype of *Calopteroles* I have named above.

TRERONIDAE

Vinago calva Temm. has been collected by Lieut. C. G. Finch-Davies at Otavifontein, and W. L. Sclater has recorded *V. wakefieldi* from the lower Zambesi valley (*Ibis*, 1912, p. 28). These species represent the typical *Vinago*, characterised by having the hard apex much shorter than the soft base of the bill, as distinguished from *Phalacrotreron* Bp., type *P. delalandei*, in which the hard apex is about equal to the soft base. Having regard to the way in which pigeons have been classified in the past, it seems advisable to recognise this generic name, especially having regard to members of the two genera often occurring in the same localities from the east to the west of Africa. In the Transvaal Museum collection there are specimens agreeing very well with Reichenow's description of *Vinago = Phalacrotreron schalowi damarensis*, and this subspecies should therefore receive a place in our list. On the east a smaller, brighter yellow, form of *Phalacrotreron delalandei* has been named *orientalis* by Gunning and myself (*Ann. Transvaal Mus.* III. 112, 1911) and there are therefore two species, on the east and west respectively (each again with two subspecies) of *Phalacrotreron* and two species, also on the east and west, of *Vinago*, occurring within our limits.

COLUMBIDAE

Neither of our two pigeons should be retained in the genus *Columba*. Blanford (*Fauna of British India*, iv. 32, 1898) places "*Columba*" *arquatrix* Temm. in the genus *Dendrotreron*, genotype *D. hodgsoni*; but having regard to the difference in the colour of the "soft parts" and the nesting habits of the two species, it seems advisable to retain our species in the genus *STRICTOENAS* Reichenbach, of which it is the genotype. "*Columba*" *phaeonota* G. R. Gray, differs in having the lores as well as the ocular area unfeathered, the tarsus quite nude, shorter claws and the feathers of the neck bifurcate, and there is no reason why it should not be placed in the genus *Dialiptila* Salvad., genotype *D. guinea*.

According to Mathews (*Nov. Zool.* xvii. 503, 1910) the genotype of *Turtur* Selby is the bird commonly known as *Chalcopelia afra*, and the species placed under *Turtur* must now be placed under *Streptopelia* Bonaparte, genotype *S. risoria*. Sharpe (*Handl. Gen. and Spp. of Birds*, i. 78, 1899) places "*Turtur*" *senegalensis* under *Stigmatopelia* Sundevall, in which Oberholser (*Proc. U.S. Nat. Mus.* xxviii. 843, 1905) concurs, on account of the bifurcation of the feathers of the neck. It may be noted that our form should bear the name of *Stigmatopelia senegalensis aequatorialis* Erlanger (*Journ. f. Orn.* 1905, p. 116, Pl. V, fig. 3). Of the remaining South African species commonly placed under *Turtur*, I consider that our Cape Turtle Dove should be separated from *Streptopelia*, represented here by *S. semitorquata* and *S. ambigua*, under a different generic head, for which I propose the name of AFROPELIA gen. nov., genotype *Columba capicola* Sundevall, characterised by the consistently smaller bill and general smaller size; members of the two genera commonly occur side by side throughout the tropical range of the larger one. There are three forms of *Afropelia capicola* recognised within our limits, the typical one in the extreme south and extending northwards on the east to about Swaziland, *damarensis* Finsch and Hartlaub on the greater part of the west, and *tropica* Reichenow in the tropical low country of the north-east.

W. L. Sclater (*Ibis*, 1912, p. 34) has recorded *Turtur afra* (L.) from Tamarara for the first time within our limits and there is also a specimen of the species from Beira, collected by P. A. Sheppard, now in the Transvaal Museum collection. It is distinguished by having a light coloured bill and blue wing spots, as compared with *T. chalcospilos*, which has a dark coloured bill and the wing spots more or less green. Gunning and Haagner were technically in error in placing *T. afra* in their *Check. List* in 1910, the species not having been recorded from South Africa at that time and the specimens upon which they commented as having green and blue wing spots being referable to *T. chalcospilos caffra* Reichenow. Rothschild (*Bull. Brit. Orn. Cl.* xxxviii. 26, 1917) has named the *T. afra* occurring within our limits as *T. afra sclateri*. I find that *T. chalcospilos volkmanni* (Rchw.) differs consistently from eastern specimens in having a shorter wing (100 to 105 mm., as against 108 to 116 mm.), but that the tropical specimens from the east are almost as pale as those from the west and therefore much paler than those from the south-east. This larger pale form, which occurs from the eastern Transvaal to the Zambesi, I propose to name *Turtur chalcospilos zambesiensis* subsp. nov., the type from "Zimbiti," Beira district. *T. afra* and *T. chalcospilos* so often occur in the same localities that perhaps they should receive subgeneric recognition, the difference in the colour of the bill being taken as the defining character, as it certainly is a most useful guide in a great many cases amongst birds.

RALLIDAE

Sharpe (*Handl.* i. 100, 1899) places *Crex egregia* Peters under the generic name of *Crexopsis* Sharpe, which is admitted as correct; but *Ortygometra pusilla* (Pallas) is placed by him under *Porzana* Vieillot, which upon the same basis should be kept separate, *pusilla* being more akin to *Zapornia* Leach in the shortness of its hind toe. I would, however, place *pusilla* in a distinct genus under the new name of SCHOENOCREX, on account

of the difference in the shape of the wing, the relationship of *Zapornia* to this genus being equivalent to *Crex* and *Crecopsis*. *Limnobaenus marginalis* (Hartlaub) was omitted from Gunning and Haagner's *Check List* in 1910, apparently by an oversight, the species having been recorded by W. L. Sclater from South Africa. The name of *Corethrura* Gray (1846), which is used by Reichenow, is preoccupied by *Corethrura* Ericksson (1844). Some authorities have separated the Lesser Gallinule under the generic name of *Porphyryula* Blyth (1849), or *Porphyriola* Sundevall (1872); but it does not seem to have occurred to anyone that the Lesser Moorhen, *Gallinula angulata* Sundevall, is equally distinct from the typical *Gallinula*. This is the more remarkable, as the synopsis of these genera in the *Catalogue of Birds in the British Museum*, Vol. XXIII. indicates that it should be placed in the genus *Porphyriops* of South America, though the species is placed in this work in the genus *Gallinula*! C. H. B. Grant (*Ibis*, 1915, p. 48) has separated the African form of the European Moorhen under the name of *Gallinula chloropus meridionalis* Brehm; but Hartert (*Nov. Zool.* xxiv. 268, 1917) has shown that *G. C. brachyptera* of the same author has precedence. Hartert at the same time (p. 265) has shown that *Porphyrio madagascariensis* Latham is the name to be used for the African Purple Gallinule. Iredale and Bannerman (*Ibis*, 1921, p. 308) have shown that *Limnocorax niger* (Gmelin) is not tenable for the African Black Crane and that the name of *L. flavirostra* Swainson must be used.

HELIORNITHIDAE

The South African species of Finfoot should bear the name of *Podica petersi* Hartlaub. Mackworth-Praed (*Ibis*, 1917, p. 414) has recently ventured an opinion that there are two species of Finfoot within our limits, differing in size only; but I fear that sufficient allowance has not been made for errors in sexing in the specimens examined, as there are two specimens in the Transvaal Museum, sexed as females, which have the dark throat and large size of males, which cannot very well be females on this author's own showing, females being always considerably smaller than males in this genus.

PODICIPEDIDAE

Mathews (*Nov. Zool.* xvii. 494, 1910) has shown that *Colymbus* is not applicable to the Grebes and Dabchicks. Our species should be recognised in the following manner:

Potiocephalus for *Podiceps capensis*.

Proctopus for *Podiceps nigricollis gurneyi* Roberts (*Ann. Transvaal Mus.* vi. 118, 1919).

Podiceps for *P. cristatus infuscatus* (Salvad.) (cf. Reichenow, *Vogelf. Mittelfrik. Seengeb.* 1911, p. 236).

HYDROBATIDAE

Mathews has effected a considerable improvement in the classification of sea-birds in his renovation of the nomenclature of the birds of Australia; but as I have had little facility for studying these birds, I must crave indulgence if the following emendations are not correctly interpreted.

Procellaria pelagica = *Hydrobates pelagica* (cf. Mathews and Iredale, *Ibis*, 1915, p. 579).

Oceanodroma leucorhoa = *Cymochorea leucorhoa* (*idem*).

Puffinus kuhli = *Calonectris kuhli* (*idem*).

P. gravis = *Ardenna gravis* (*idem*).

P. griseus = *Neonectris griseus* (*idem*).

Procellaria cinerea = *Priofinus cinereus* (Mathews, *B. Australia*, II. 119) = *Adastor cinerea* (*Austral. Av. Rec.* IV. 131).

Majaqueus aequinoctialis = *Procellaria aequinoctialis mixta* Mathews (*B. Australia*, II. 106).

Priocella glacialoides = *Priocella antarctica* (Stephens) (*idem*, p. 126).

Oestrelata = *Pterodroma* (*idem*, p. 129). I note that there are three groups contained in this genus, subgeneric recognition of which should be considered, namely:

Pt. macroptera: tarsi entirely black = *Pterodroma*.

Pt. incerta and *lessoni*: tarsus yellow and over $1\frac{1}{2}$ inch = *Oestrelata*.

Pt. mollis: tarsus yellow and under $1\frac{1}{2}$ inch = subgenus?

Ossifraga = *Macronectes* (cf. Richmond, *Proc. U.S. Nat. Mus.* XXVIII. 76, 1905).

Prion caerulea = *Halobaena caerulea* (cf. Mathews, *B. Australia*, II. 94, 1912).

Prion brevirostris = *Pseudoprion turtur brevirostris* (cf. *idem*, p. 220).

Prion banksi = *Heteroprion desolatus banksi* and a new subspecies *Heteroprion desolatus peringueyi* Mathews (*idem*, p. 230).

OCEANITIDAE

Fregatta melanogaster = *F. tropica* J. Gould, and *F. grallaria* = *F. leucogaster* J. Gould (cf. Mathews, *B. Australia*, II. 42).

PELECANOIDIDAE

Pelecanoides exul = *P. urinatrix exul* (cf. *idem*, p. 238).

DIOMEDEIDAE

Diomedea melanophrys = *Thalassarche melanophris* (cf. *idem*, p. 264).

Thalassogeron layardi + *Diomedea cauta* = *Diomedella cauta layardi* (cf. *idem*, p. 275).

T. chlororhynchus = *Nealbatrus chlororhynchus chlororhynchus* (cf. *idem*, pp. 274 and 282).

T. culminatus = *T. chrysostoma chrysostoma* (cf. *idem*, pp. 274 and 282); but according to Oberholser's finding (*Auk*, p. 267, 1919) the correct specific name is *culminatus*.

Phaebetria fuliginosa = *P. palpebrata palpebrata* Forster (cf. Mathews, *l.c.* p. 299). The generic name of *Phoebastria* appearing in Gunning and Haagner's *Check List* (1910), appears to have arisen through a slip on the part of the former, who altered the generic name in the Transvaal Museum copy of Reichenow's *Die Vögel Afrikas*, evidently under the impression that Reichenow's reference to *Phoebastria* in the appendix of the first volume, p. 679, necessitated alteration of the name of *Phaebetria*.

STERNIDAE

Mathews (*l.c.* II. 320) has shown that the Whiskered Tern should bear the name of *Hydrochelidon leucopareia* Temminck, and the South African form is described by him as *H. l. delalandei*, the name being adopted from Bonaparte, who had omitted to describe it. This species has a stouter bill than *H. leucoptera*, and should be recognised, if need be, under the subgeneric name of *Pelodes* Kaup.

Sterna caspia = *Hydroprogne tschegrava* (Lepechin) (cf. Mathews, *l.c.* p. 335).

S. cantiaca = *Thalasseus sandwicensis* (Latham) (cf. *idem*, p. 325).

- S. media* = *T. bengalensis* (Lesson) (cf. *idem*, p. 353). Subgeneric separation of this species might be considered on account of its short tail and yellow, instead of black, bill. No name is available.
- S. bergii* = *T. bergii* (cf. *idem*, pp. 338 and 346). This larger species might receive subgeneric rank under the name of *Pelecanopus* Wagler.
- S. macrura* = *S. paradisea* Brunnich (cf. *idem*, p. 360). This species might be subgenerically differentiated on its very short tarsus.
- S. dougalli* = *S. (Gygisterna) dougalli* (cf. *idem*, pp. 325 and 365).
- S. minuta* = *Sternula albifrons* (Pallas) (cf. *idem*, p. 377).
- S. saundersi* = *Sternula albifrons saundersi* (cf. *idem*, pp. 376-380).
- Micranous leucocapillus* = *Megalopterus minutus atlanticus* Mathews (*l.c.* p. 423).
- Gygis candida* = *Leucanous albus albus* (Sparrmann) (cf. *idem*, pp. 432 and 439).

LARIDAE

- Larus hartlaubi* = *Bruchigavia novae-hollandiae hartlaubi* (cf. *idem*, p. 457).
- L. cirrocephalus* should be placed in another genus under the name of *Gelastes* Bonaparte, genotype *L. gelastes* Theinemann.

STERCORARIIDAE

- Stercorarius antarcticus* = *Catharacta skua* (cf. *idem*, p. 482).
- S. pomarinus* = *Coprotheres pomarinus* (cf. *idem*, p. 497).
- S. crepidatus* = *S. parasiticus* Linné (cf. *idem*, p. 503).

HAEMATOPODIDAE

- Haematopus moquini* = *H. unicolor* Forster (cf. Mathews and Iredale, *Austral. Av. Rec.* IV. 111).

CHARADRIIDAE

- Lobivanellus lateralis* = *Afrifyx lateralis* (cf. Mathews, *B. Australia*, III. 41, 1913).
- Hoplopterus speciosus* (Wagler, 1829) = *H. armatus* (Burchell, *Travels*, I. 501, 1822).
- Squatarola helvetica* = *S. squatarola* (L. 1758).
- Charadrius* + *Ochodromus* + *Aegialitis asiatica* = *Eupodella asiatica* (cf. Mathews, *l.c.* III. 83).
- Charadrius* + *Ochodromus* + *Aegialitis geoffroyi* = *Pagoa leschenaultii* (Lesson, 1826) (cf. Mathews, *l.c.* III. 82 and *Austral. Av. Rec.* II. 87, 1914).
- Charadrius* + *Aegialitis marginatus* = *Leucopoliis marginatus* (cf. *idem*, II. 113). There are three easily recognised subspecies of the Sandplover, namely, the typical form from the Cape Peninsula, which has the wings long and the underparts of the body almost pure white; the Damara form (*pallidus* Strickland), which has the wings long as in the typical form, but the underparts of the body buffish coloured; and the East African form (*tenellus* Hartlaub), which has the wing constantly shorter and the underparts of the body even more richly buffish than the Damara form.
- Charadrius* + *Aegialitis alexandrinus* = *Leucopoliis alexandrinus* (cf. *idem*, III. 113). It seems strange that this species should occur so far south of its range, and it would be advisable to examine the specimens again, as it seems to me not unlikely that young birds of one of the other species of this genus have been mistaken for it.
- Charadrius* + *Aegialitis venustus* = *Leucopoliis rufocinctus* (Reichenow, *Vog. Afrik.* I. 680, 1900) (et cf. Mathews, *B. Australia*, III. 113). It seems advisable to recognise this species in a subgenus, for which I propose the name of AFRAEGIALIS, the bill and tarsus being short and a rufous chest-band being

present, the typical *Leucopoli* having the bill long and the tarsus short, and the subgenus *Helenaegialis* Mathews having both the bill and tarsus long, and neither of these two subgenera having a rufous chest-band.

Charadrius + *Aegialitis pecuaria* + *varius* = *Leucopoli* (*Helenaegialis*) *varius* (cf. Mathews, *idem*, p. 114 = *pecuarius* Temm. (cf. Sclater, *Bull. Brit. Orn. Cl.* XLII. 72, 1922).

Aegialitis hiaticula = *Charadrius hiaticula* (cf. *idem*, p. 123).

Charadrius + *Aegialitis* + *Oxyechus tricollaris* = *Afroxechus tricollaris* (cf. *idem*, p. 124).

Stephanibyx melanopterus = *S. melanopterus minor* Zedlitz (*J. für Orn.*, 1910, p. 309).

S. inornatus = *S. lugubris* (Lesson) (cf. *Ibis*, 1915, p. 56).

Both these species should be removed to another subgenus, differing as they do in having a shorter tarsus, a different style of coloration, the bill unicoloured (instead of red at the base) when compared with *Stephanibyx coronatus*, the type of the genus, side by side with which *melanopterus* is sometimes found during the breeding season.

RECURVIROSTRIDAE

Himantopus = *Hypsibates* (cf. Mathews, *B. Australia*, III. 144).

SCOLOPACIDAE

Numenius phaeopus = *Phaeopus phaeopus* (cf. Mathews, *l.c.* p. 175).

Limosa lapponica = *Vetola lapponica* (cf. *idem*, p. 191).

This species has been recorded from Durban by E. C. Chubb (*J. S. Afr. Orn. Un.* VII. 80), as also the species *Limosa limosa* (XI. 19); Finch-Davies has also secured a specimen of the former species at Walvis Bay on the west coast.

Totanus stagnatilis = *Iliornis stagnatilis* (cf. Mathews, *l.c.* p. 197).

Totanus + *Helodromus ochropus* = *Tringa ochropus* (cf. *idem*, pp. 202 and 205).

Totanus fuscus = *Erythroscelis fuscus* (cf. *idem*, p. 198).

Totanus + *Tringoides hypoleucos* = *Actitis hypoleucos* (cf. *idem*, p. 214).

Totanus calidris = *T. totanus* (L. 1758).

Totanus + *Glottis littoreus* + *glottis* + *nebularius* = *Glottis nebularius* (cf. *idem*, p. 224).

Totanus glareola = *Rhyacophilus glareola* (cf. *idem*, p. 229).

Totanus + *Pavoncella* + *Machetes pugnax* = *Philomachus pugnax* (cf. Mathews and Iredale, *Austral. Av. Rec.* III. 117).

Calidris arenaria = *Crocethia leucophaea* (Vroeg, 1764) (cf. Mathews, *B. Australia*, III. 243, Mathews and Iredale, *Austral. Av. Rec.* III. 114) = *alba* Pallas (cf. *Ibis*, 1921, p. 311).

Tringa + *Limonites minuta* = *Pisobia minuta* (cf. Mathews, *B. Australia*, III. 245).

Tringa + *Ancylochilus subarquata* + *ferruginea* = *Erolia ferruginea* (cf. *idem*, p. 264).

Tringa canutus + *Canutus canutus* = *Calidris canutus* (cf. *idem*, p. 269 and VIII. Part V, p. xiii).

Gallinago major = *Capella media* (cf. Mathews and Iredale, *Austral. Av. Rec.* IV. 131).

CURSORIIDAE

The genus *Rhinoptilus* of authors contains three quite distinct genera, characterised as follows:

Rhinoptilus, genotype *R. chalconotus* (Temminck), with the bill very stout, nostrils large and round, large size and with metallic coloured tips to the primaries. I suspect that the bird described as "*Charadrius heteroclitus*" by Lichtenstein (*Cat. Rev. Nat. Rar.* No. 309, 1793), is referable to this bird, and, if so, the name of *Pipus*, which he gave to distinguish it as a subgenus on a supposed difference in the toes, will also become available, both the specific and generic names now in use falling out. There is, however, an element of doubt, and I do not therefore propose to use the name given by Lichtenstein.

Hemerodromus Heuglin, genotype *H. cinctus* Heuglin, has the bill weaker, more elongate nostrils, smaller size and no metallic tips to the primaries.

Smutsornis gen. nov., genotype *Cursorius africanus* Temminck, has the bill very weak, nostrils still more elongate, size smallest of the three and also without metallic tips to the primaries.

With regard to species, *Hemerodromus cinctus scebohmi* Sharpe is apparently a valid subspecies and should be retained in our list. von Erlanger (*J. für Orn.* 1905, pp. 60-61) has described a subspecies of *Smutsornis africanus*, under the name of *sharppei*, on four very pale specimens collected by Lübbert in Damaraland; there are two specimens in the Transvaal Museum collection from Namutoni and Ondongo, Ovamboland, showing that the race is well characterised. C. Grant (*Ibis*, 1915, p. 60) has made Deelfontein, C.P., the type locality for this subspecies, despite the fact that Erlanger stated distinctly the specimens were from Damaraland. W. L. Sclater (*Bull. Brit. Orn. Cl.* XLI. 132, 1921) has, however, now honoured the error by conferring on the southern birds the name of *Rhinoptilus africanus granti*, and making *sharppei* a synonym of *africanus*.

Cursorius rufus and *C. temmincki* might well be placed in different subgenera, as they represent two groups of species which frequently occur side by side, and I propose therefore to place *C. temmincki* in a new subgenus, MICROCURSORIUS.

GLAREOLIDAE

Galachrysia (not *Galactochrysea* as spelt by some authorities) is a valid genus according to Mathews (*B. Australia*, III. 320, 1913).

Glareola melanoptera Nordmann = *G. nordmanni* Fischer.

BURHINIDAE

(nec *Oedicnemidae*, cf. Mathews, *B. Australia*, III. 342)

The species of Thickknees divide naturally into two main groups, one, containing *Oedicnemus*, with the dertrum half the length of the mandible and the bill half the length of the tarsus, and the other, containing *Burhinus*, with the dertrum short and the whole bill decidedly less than half the length of the tarsus. *Esacus* of southern Asia and *Orthorhamphus* of Australia appear to be aberrant members of the group containing *Oedicnemus*, and likewise *Burhinus* appears to be an aberrant member of the group containing, amongst others, our *Oedicnemus capensis*. If therefore, the generic status of *Esacus* and *Orthorhamphus* is maintained, as has been done in the past, we must also separate *O. capensis* from *Burhinus* on the same grounds,

and I propose the new generic name of BURHINOPS, making *O. capensis* Lichtenstein the genotype; it has the tail length not more than half the wing length, *Burhinus* having the tail more than half the wing length. Our *O. vermiculatus* Cabanis remains in the genus, as in the past.

OTIDAE

The arrangement of the Bustards should be that followed by Sharpe (*Handlist*, 1899, vol. I.), with the exception of alterations pointed out by Mathews and Oberholser, as follows:

Otis + *Eupodotis kori* = *Choriotis kori* (cf. Mathews, *B. Australia*, III. 361, 1913; *Nov. Zool.* XVIII. 8).

O. caffra and *O. ludwigi* = *Neotis* Sharpe.

Otis + *Tracheliotis caerulescens* and *barrowi* = *Eupodotis* Lesson (cf. Mathews, *Nov. Zool.* XVIII. 8, 1911).

O. ruficrista = *Lophotis* Rchb.

Otis + *Compsotis afra* and *afraoides* (+ *leucoptera*) = *Afrotis* Gray (cf. *idem*).

O. vigorsi and *ruppelli* = *Heterotetrax* Sharpe.

Otis + *Lissotis melanogaster* = *Lissotis melanogaster notophila* Oberholser (*Proc. U.S. Nat. Mus.* XXVII. 836, 1905).

GRUIDAE

Anthropoides paradisea = *Tetrapteryx paradisea*.

PLEGADIDAE

Mathews (*Auk*, 1913, p. 95) has shown that the generic name of *Ibis* is applicable to the Wood Ibis and not to the Sacred Ibis, which must now bear the name *Threskiornis aethiopica*.

The Hadadah Ibis should be referred to the genus *Hagedashia*. Neumann (*Ornis*, XIII. 193, 1910) has named three subspecies of the Hadadah, two of which, *H. h. guineensis* and *H. h. erlangeri*, appear to occur within our limits in the north, on the west and east respectively (cf. *Ann. Transvaal Mus.* IV. 169, 1914).

Plegadis autumnalis = *P. falcinellus* (cf. Mathews, *B. Australia*, III. 396, 1914).

CICONIIDAE

Tantalus + *Pseudotantalus ibis* = *Ibis ibis* (cf. Mathews, *l.c.*)

Dissoura microscelis = *D. episcopus*.

Ciconia nigra should be removed to the genus *Melanopelargus* Reichenbach, of which it is the genotype.

SCOPIDAE

C. H. B. Grant (*Ibis*, 1915, p. 68) has separated the Hammerkop of the greater part of Africa from the West African typical form under the name of *Scopus umbretta bannermani*.

ARDEIDAE

The Herons should receive generic rank as follows:

Ardea cinerea L., genotype of *Ardea*.

A. melanocephala Vig. and Childr. should be subgenerically separated on account of its smaller size and shorter bill, for which the new name of AFRARDEA may be used.

A. goliath is the genotype of *Ardeomega* Bonaparte, and should receive full generic rank.

A. purpurea has been placed in a separate genus by several authors under the name of *Pyrherodia* Finsch and Hartlaub, and there seems to be no reason why this action should not be consistently followed.

Herodias brachyrhyncha = *Mesophox intermedia brachyrhyncha*.

Herodias + *Garzetta garzetta* = *Egretta garzetta* (cf. Mathews, *B. Australia*, III. 422, 1914).

H. alba = *Casmerodius albus melanorhynchus* (Wagler) (cf. Mathews, *l.c.*, in part).

Nycticorax leuconotus (Wagler) should apparently be removed to the American genus *Nyctanassa*, although all authorities have so far placed it under *Nycticorax*, with which it should never have been placed. There is a somewhat similar case in the *Rallidae*, and it seems that this erroneous course has been followed purely on the hypothesis that the southern Old World species could not be related to species of the southern New World. Further instances will be found in the *Hirundinidae* and *Anatidae*, not to mention others which I have not been able to compare and verify. This course is the more inexplicable as *Dendrocygna viduata* and *Gelastes cirrocephalus* are recorded from both sides of the Atlantic Ocean!

Bubulcus lucidus = *B. ibis* (Linn. 1758).

Ardetta = *Ixobrychus* (cf. Lönnberg, *J. für Orn.* 1906, p. 532).

Ardetta sturmi = *Ardeivalla sturmi*.

PHOENICOPTERIDAE

Phoenicopterus roseus = *P. antiquorum*. *

P. minor = *Phoeniconaias minor*.

ANATIDAE

Sarkidiornis melanotus = *S. melanotus africanus* (cf. C. Grant, *Ibis*, 1915, p. 72).

Chenalopex aegyptiacus = *Alopochen aegyptiacus* (cf. Richmond, *Proc. U.S. Nat. Mus.* LIII. 583, 1917).

It is clear that the two South African ducks commonly placed under *Anas* should not be retained there, the genotype (*Anas platyrhyncha* Linné) differing in several important respects. *A. sparsa* Eyton differs in having the middle toe and claw much longer than the bill, the sexes alike in colour and the colour markings very different; this species I would therefore refer to a new genus bearing the name of MELANANAS. *A. undulata* Dubois differs in colour markings, has no seasonal change of plumage and the claws longer and sharper; it may therefore be referred to a new genus, AFRANAS. The smaller species sometimes removed under the name of *Nettion*, or *Nettion*, should naturally also be separated; of the species commonly lumped in this genus, there are two names to be considered, *Nettion*, genotype *N. crecca*, and *Virago*, genotype *V. gibberifrons*. Both our species, *capensis* and *punctata*, differ from these genotypes in the greater length of the secondaries and breadth of the bill; *capensis* differs further from them in that the lamellae project prominently below the tomia of the bill, while *punctata* (which has the lamellae as in *Nettion* and *Virago*) has fewer tail feathers (only fourteen) and the colour markings of the wing as in "*Nettion*" *brasiliense*, which may perhaps prove to be congeneric. Having regard to these differences, I would raise our two species to generic rank, as follows:

Notonetta gen. nov., genotype *Anas capensis* Gmelin.

Micronetta gen. nov., genotype *A. punctata* Burchell.

Anas erythrorhyncha Gmelin should be placed in the genus *Paecilonitta*, a course which has been followed by most authors.

Mathews (*Nov. Zool.* XVIII. 9, 1911) has rejected the name of *Erismatura* and employed that of *Oxyura*, which proves also to be preoccupied. But whatever conclusion may be come to in reference to the species exotic to South Africa, our species must bear the name of *Cerconectes maccoa*, on account of the difference in the number of tail feathers.

PHALACROCORACIDAE

Mathews (*B. Australia*, IV. 162, 1915) has pointed out a number of necessary alterations in the classification of the Cormorants. His review does not, however, include the African species, and it therefore becomes necessary here to deal with them. They may be arranged as follows:

With fourteen tail feathers:

Phalacrocorax lucidus: bill long, but stout; lores not feathered.

Pseudocarbo gen. nov., genotype *Pelecanus capensis* Sparrmann: bill long, but slender; size smaller; lores feathered.

With twelve tail feathers:

Microcarbo africanus: bill very short; size small; tail more than half the length of the wing.

Anacarbo gen. nov., type *Graculus neglectus* Wahlberg: bill longer; size much larger; tail less than half the length of the wing; lores densely feathered.

Microcarbo coronatus (Wahlberg) has been placed in the synonymy of *M. africanus* by all recent authors; but it is unquestionably distinct, both on the width of the markings on the upper parts and the length of the tail; *coronatus* is found only on the seaboard, while *africanus* is found inland. All the specimens of *A. coronatus* that I have seen that are adult are black in both sexes; but amongst the specimens in the Transvaal Museum collection of *africanus* there is only one adult male from Potchefstroom, that is altogether black, which makes me think that possibly the female does not assume a wholly black plumage. I do not remember ever to have seen a wholly black specimen in life of this species, and I hope we shall have any such cases reported when they are observed.

I observe that Millet-Horsin has recently described a subspecies under the name of *Phalacrocorax africanus menegauxi*, from Togo and Dahomey (cf. *Rev. Franç. d'Orn.* No. 152, p. 177, Dec. 1921). No reference is made to Swainson's species *Carbo longicaudatus* (cf. *B. W. Africa*, II. 255, Pl. XXXI), which may possibly be the same form, though Swainson's form was not in breeding dress and there is therefore an element of doubt. The South African form of the Reed Duiker was described by Smith as *Carbo africanoides* (*Report Exp. for Expl. Africa*, 1836, p. 37) for a specimen in non-breeding plumage obtained near New Latakoo, and apart from colour characters, which have not yet been described in full for the races, this form must stand on the character of its shorter tail, this measuring 150-160 mm. in thirteen specimens I have examined from Durban, Beira, Boror, Potchefstroom, Pretoria, Moordrift and Shesheke, as against 170 in the typical form and 175 in *menegauxi* according to Millet-Horsin; in a single immature specimen from Klein Letaba the tail measures 170, seeming to show that the northern species sometimes migrates southwards. In the bill the length from the gape to the tip varies between 51 and 57 mm. in the fourteen speci-

mens, and in the West African form it is given as 56. In *coronatus* the tail measures only about 130 mm., the bill from the gape 47-54, and the black tips to the scapulars measure in longitudinal width not more than 4 mm. as against 6 in *africanus africanoides*. Two immature specimens of *coronatus* examined are not white below, and the throat is yellowish, not white.

SULIDAE

- Sula capensis* = *Sulita capensis* (cf. Mathews, *B. Australia*, iv. 204 and 217, 1915) = *Moris capensis* (cf. Oberholser, *Auk*, 1919, p. 417).
Sula cyanops = *Parasula dactylatra* (cf. Mathews, *l.c.* p. 223 and *Nov. Zool.* xviii. 9, 1911).
S. sula + *leucogastra* = *Piscatrix sula* (cf. Mathews, *l.c.* pp. 199 and 209, 1915).

PHAETONTIDAE

- Phaeton rubricauda* = *Scaeophaeton rubricauda* (cf. Mathews, *Austral. Av. Rec.* ii. 56, 1913).
P. leptura = *Leptophaeton leptura* (cf. Mathews, *l.c.*). Chubb has recorded this species from Durban (*Journ. S. Afr. Orn. Un.* xi. 19, 1915).

PELECANIDAE

Mathews (*B. Australia*, iv. 312, 1915) has separated the Australian Pelecan under the generic name of *Catoptropelicanus*, and if we follow this arrangement it becomes necessary to find new generic names for both the Pelecanus found occurring within South African limits. The typical genus *Pelecanus* Linné contains only one species, *P. onocrotalus*, characterised by having twenty-four tail feathers, but the base of the mandible densely feathered. *Catoptropelicanus* Reichenbach, type *P. conspicillatus*, has twenty-two tail feathers, and a row of feathers between the naked orbits and lores; *Leptopelicanus* Reichenbach, genotype *P. fuscus*, also has twenty-two tail feathers, but no row of feathers separating the naked orbits and lores, and the pouch extends halfway down the foreneck; the species *Pelecanus roseus*, *P. crispus* and *P. philippinensis* differ from *Leptopelicanus fuscus* and its allies in having the pouch attached to the upper part of the foreneck, though like it they have twenty-two tail feathers and no feathers on the lores. To this last group the name of METAPELECANUS gen. nov., type *P. roseus* Gmelin, may be applied. Finally, *P. rufescens* Gmelin differs from all the preceding in the possession of only twenty tail feathers and it may therefore be placed in a new genus bearing the name of NEOPELECANUS.

VULTURIDAE

- Otogyps auricularis* = *Torgos tracheliotus* (Forster) (cf. Richmond; *Proc. U.S. Nat. Mus.* xxxv. 646, 1909).
Gyps kolbei = *G. coprotheres* (Forster) (cf. Kirke-Schwann, *Synop. List Birds of Prey*, iii. 1920).
Pseudogyys africanus = *P. africanus fullebornei* Erlanger, *Journ. für Orn.*, 1904.
Neophron monachus = *Necrosyrtes monachus pileatus* (Burch.).

SAGITTARIIDAE

- Serpentarius serpentarius* + *secretarius* = *Sagittarius serpentarius* (Richmond, *Proc. U.S. Nat. Mus.* liii. 622, 1917).

FALCONIDAE

Polyboroides typicus = *Gymnogenys typicus*! (cf. Richmond, *Auk*, 1902, p. 92).

I cannot find myself in agreement with the present arrangement of the Harriers, as they appear to me to be an ancient group, if we are to judge by the isolation of the species. Mathews has reduced the numerous generic names that have been applied in the past to four which can be utilised, the rest falling to the synonymy of these four (cf. *B. Australia*, v. 10, 1915), as follows:

Circus type *C. aeruginosus*.

Spizacircus type *C. macropterus*.

Spilocircus type *C. assimilis*.

Pygargus type *C. pygargus*.

The first three appear to me to be allied, the second and third representing subgenera of the first in South America and Australia respectively, while the fourth represents a distinct genus. The emargination of the primaries must be an anciently developed character, since we find it quite as constant in the immature as in the adults. *Circus aeruginosus* is a migratory species, characterised by its long and stout tarsus and the emargination of the second outermost primary so far back that it is almost hidden basally by the upper primary coverts; *C. ranivorus* of South Africa is a resident ally of *aeruginosus*, and, like *C. macropterus* and *C. assimilis*, has developed local differences. *Pygargus pygargus* is also a migrant to South Africa from the northern hemisphere, but differs from *C. aeruginosus* in having a much shorter and more slender tarsus and the emargination of the second primary situate a considerable distance beyond the tips of the upper primary coverts. *C. macrourus* (Gmelin) is similar to *Pygargus* in not having the fifth outermost primary emarginate, but differs in having the emargination of the second outermost primary nearer the base as in *Circus*; in the tarsus it is intermediate between *Circus* and *Pygargus*. Having regard to these differences, not to mention those of colour, which are important, I feel it is necessary to give the species a new generic name, PSEUDOCIRCUS, appropriate as indicating its position, *Accipiter macrourus* Gmelin the type. The last species on the South African list is *C. maurus* (Temminck), a resident species, which is perhaps allied to *Pseudocircus*, though differing therefrom in its black coloration and in having the fifth primary emarginate on the outer web; for this species I propose the new generic name of MELANOCIRCUS.

Gurney (*Ibis*, 1875, pp. 353-370), in reviewing the classification of the *Accipitres*, has shown that *Astur polyzonoides* and *A. tachiro* should not be referred to *Astur*, and places them under *Scelopspiza*, type *A. francesii* A. Smith; but with this arrangement I cannot concur, although agreeing that they should be removed from *Astur*. Apart from superficial resemblances between some members of the genus as commonly associated, the scaling of the tarsus indicates several well-defined groups, or natural genera. In the typical genus *Astur*, type *A. palumbarius* = *gentilis*, the tarsi and toes are very short and stout and the scales on the former are broad, transverse scutes anteriorly and posteriorly, separated laterally by a number of small, reticulate scales. In *A. polyzonoides*, as well as in *A. tachiro*, the tarsi and toes are long and slender, and the reticulate scales are replaced

by larger ones, very different from the small scales of the typical *Astur*. Although Gurney stated that "*Accipiter*" (*Astur* auct.) *melanoleucus* is aberrant, he did not state fully in what respect, nor apply a generic name; I therefore now separate *Astur melanoleucus* A. Smith under the new generic name of *NEONISUS*, characterised by having the tarsi and toes longer and weaker than in *Astur*, the lateral tarsal scales small, in three irregular rows. *A. polyzonoides* A. Sm. should be referred to the genus *Eunisis* Bonaparte (cf. Richmond, *Proc. U.S. Nat. Mus.* LIII. 590, 1917), characterised, in addition to the scaling of the tarsus, as already mentioned, by its small size, and, when compared with *Scelopspiza francesii* of Madagascar, by the shortness of its tail, the fourth primary longest and the fifth primary not emarginate on the outer web. *Astur tachiro* (Daudin) and its allies in Africa should be referred to a new genus bearing the name of *AEROSPIZA*, characterised by having the first five primaries emarginate on the outer web, the fifth primary longest, the outermost primary shorter than the secondaries, the tail three-fourths of the length of the wing, and in size larger than *Eunisis* but smaller than *Astur*.

Gurney (*l.c.*) has shown that the South African sparrowhawks should be separated into two genera, *Accipiter rufiventris* A. Smith and *A. ovampensis* Gurney remaining in the original genus, but *A. minullus* being removed to *Hieraspiza* Kaup, type *A. virgatus* of Asia. The latter genus is smaller and has a shorter middle toe than *Accipiter*.

The Tawny Eagle, *Aquila rapax* Temminck, appears to me to represent the genus *Aquila* in Africa, smaller size usually characterising species from the tropics which have congeneric allies towards the poles. *A. verreauxi* Lesson has been also placed under *Aquila* during the last generation of ornithologists, presumably because of its powerful feet; but, occurring as it does in the same localities as *A. rapax*, if it had a representative in the colder regions that species would be proportionately still larger. Its colour character is so widely different that, apart from structural differences, there should be no hesitation in referring it to a distinct genus, a proceeding which was followed by Kaup a great many years ago, the name of *Pteroaetus* having been given by him to the genus.

Aquila pennatus Gmelin is said to be the type of the genus *Hieraetus* Kaup, which should be recognised; but *A. wahlbergi* Sundevall, also referred to the genus, should be referred to a new genus which I propose to name *MICRAETUS*, characterised by having a small crest and in all stages of plumage not striped. Another bird, *Spizaetus ayresi* Gurney (*Ibis*, 1862, p. 149) has until recently been confused either with *Nisaetus spilogaster* or *Lophaetus occipitalis* (cf. Finch-Davies, *Ibis*, 1919, p. 167, Pl. III); but it is obvious that it cannot be referred to any of the genera of small eagles, and I therefore propose to place it in a new genus, *ANOMALAEETUS*, characterised by having the colour markings of the wing and tail quills as in *Lophaetus*, but with a shorter and broader crest, with the short tarsus of *Micraetus* and in the adult plumage broadly marked below with black on a white ground, much after the fashion of *N. spilogaster*; in the immature plumage the underparts of the body are plain, as in *Micraetus*. *Nisaetus* has long legs and no crest.

Of the eagles commonly placed in *Spizaetus*, neither of our two species can be retained in that genus; in this case I have been anticipated in

naming the genera they represent by Sclater (*Bull. Brit. Orn. Cl.* XLII. 75, 1922), *bellicosus* being referred to *Pölemaetus* Heine and *coronatus* to a new genus *Stephanoaetus*.

The genus *Circaetus* Vieillot, like *Circus*, contains migratory and resident species and should be divided into several subgenera: *Circaetus fasciolatus* Gray and *C. cinerascens* Vieillot might for the present be retained in the typical genus, as they appear to me to be resident representatives on the east and west, respectively, of the genotype, *C. gallicus*, of the north. *C. cinerascens*, which is recorded from our limits by Reichenow (cf. *Vög. Afrikas*, I. 573, 1901), is larger than *C. fasciolatus*, but the latter appears to increase in size northwards, so that this difference cannot be regarded as of generic value in this case. *C. pectoralis* A. Smith differs so much in plumage characters that I propose to place it in a new subgenus under the name of SMITHAETUS; and finally *C. cinereus* Vieil. is again so markedly different in colour characters that there is no option but to separate it as well, under a new subgeneric name, for which I propose MELANAETUS. In regard to my record of *C. gallicus* from South Africa (*Ann. Transvaal Mus.* IV. 109, 1911), the specimen would appear to be referable to the young of *C. pectoralis*, as stated by Finch-Davies (cf. *Ibis*, 1920, p. 419).

Gurney (*Ibis*, 1876, p. 467) long ago pointed out that *Buteo augur* and *B. jakal* (= *rufofuscus* Forster, cf. Kirke-Schwann, *Handlist of the Birds of Prey*, 1920) should be referred to the genus *Pterolestes*, and this course should be followed. The name of *Buteo desertorum* (Daudin) should never have been used for our bird, Le Vaillant's plate, on which it is founded, being quite unrecognisable; Sclater (*Ibis*, 1919, p. 254) has recently adopted the name of *B. rufiventer* Jerdon on that account, following Hartert's rejection of the name of *desertorum* (*Vog. Pal. F.* 1914, p. 1125) in favour of *B. anceps* Brehm. There is, however, still an element of doubt as to this species, some individuals being known to breed in the Cape Province, though the greater number found within our limits are undoubtedly migrants.

Recent authors do not recognise *Milvus migrans* (= *korschun* auct.) as a migrant to South Africa. *M. aegyptius* should be known as *M. aegyptius parasitus* (Daudin) (cf. Hartert, *Bull. Brit. Orn. Cl.* XXXIII. 90, 1914) the typical form being found only in the far north-east.

Helotarsus ecaudatus = *Terathopius ecaudatus* (cf. Richmond, *Auk*, 1902, p. 92).
Baza verreauxi = *Aviceda verreauxi* (cf. Mathews, *B. Australia*, v. 212, 1915).

The classification of the Falcons and Kestrels is not satisfactory, authors vainly attempting to fit the species into genera with which they have little in common, and by so doing hopelessly confusing their phylogeny. It is evident from the number of generic names applied during the last century that the authors of that period were observant and dissatisfied with lumping methods, and we have therefore now, by returning to a system of more natural arrangement of the groups, generic names for nearly all of them. Throughout the *Accipitres* we find that colour characters are remarkably prominent in indicating the phylogeny of the species, structural characters often changing to so great an extent that if we are guided by them alone problems of phylogeny are most difficult to settle. The differences between banding and striping of the plumage, for example, remain so

constant as group characters, that I cannot see why these should not be utilised for grouping purposes, even when superficially in structure species might seem to be allied. Difference in size may arise from conditions of climate, size of the prey, insular isolation or other local adaptation, the retention of a certain size being subsequently a matter of length of time under which the species may exist without the necessity of changing its environment or habits. Species found in the tropics are nearly always smaller than their allies found towards the poles and a recognition of this difference helps considerably towards a solution of the changes through which the species have passed, each physical change in the conditions of certain regions (which have undoubtedly taken place, as proved by palaeontology) effecting a change also in the fauna of those regions, which may give rise either to migration for part of the year, or local adaptation. To those who are perhaps sceptical, it would be best to refer to any large collection of these birds, where it will be seen that they form a most interesting study.

Our *Falco biarmicus* is obviously a southern representative of *Hierofalco candicans* and for the present it might be very well retained in the same genus. *Falco minor* is likewise a southern representative of *Rhynchodon peregrinus*, the smallest forms being found within the tropics, but these increasing in size again still farther south; Hartert has recently given dimensions of the tropical form as being those of *minor*, but the true *minor* of the Cape Province is a larger bird. According to Mathews (*B. Australia*, v. 221, 1915) the genotype of *Falco* is *F. subbuteo*, a migratory species which occurs as such in South Africa. The resident representative of this species appears to me to be *F. cuvieri* A. Smith, which has, however, long ago lost the character of the heavy stripes below (being finely striped in immature only) and has the primary formula different; I propose for it the new generic name of CUVIERIA. *F. ruficollis* is allied to *Chiquera chicquera* of southern Asia, and differs in having the underparts of the body more or less and the upper parts distinctly barred, and, like *Cuvieria*, differs from *Falco* in the wing formula. With regard to *F. ruficollis*, there seems to be general collusion to reject the name of *F. horsbrughii* Gunning and Roberts (*Ann. Transvaal Mus.* III. 110, 1911); but it may be pointed out that presuming the type and co-type are in immature plumage (despite the fact that they were breeding), the greater size of the birds admits of retention of the name in a subspecific sense at least. We have a male specimen of *F. ruficollis* from Damaraland (Finch-Davies), which is in the typical plumage marking of *ruficollis*, but rather larger and apparently much paler, as might be expected; and Mr A. K. Haagner has recently presented to the Transvaal Museum an adult female taken at Pyramids a few miles north of Pretoria, also with the plumage markings of *ruficollis*, but in size similar to the female of *horsbrughii*. Having regard to the birds described as *horsbrughii* coming so close to *chicquera* I think that it is still possible it may be a distinct species, the markings being so very different from those of *ruficollis* that the two might easily occur side by side and still not interbreed. The matter is one which must, however, be settled by those who have more material for comparison. In the event of the type and co-type of *horsbrughii* proving to be immature, the name will stand as a subspecies of *ruficollis*, while the pale bird from Damaraland, which is intermediate

in size in all respects, may be known as *Chiquera ruficollis daviesi* subsp. nov. after the late Lieut. C. G. Finch-Davies, by whom the specimen was collected.

Intermediate between the Falcons and Kestrels we have a very distinct genus in *Dissodectes*, which appears to me to have widely separated allies of similar colour characters, grey predominating. *D. dickinsoni* appears to me to have evolved from the Madagascar species *D. zoniventris*, which is small, as in the case of many other island species, and doubtless formerly evolved from a larger species, such as "*Falco*" *eleonora* and *Notofalco hypoleucus*, which may again have evolved from a still larger northern species that has lost its former colour characters under arctic conditions.

The two dimorphous Red-legged Kestrels which migrate from the northern hemisphere should be retained in the genus *Tichornis*, to distinguish them from the resident monomorphous species that are scattered over the universe and bear the name of *Cerchneis*, of which *C. capicola* is the genotype. *Cerchneis rupicoloides* does not, however, appear to me to be correctly allocated in this genus, and I therefore propose to place it under the new generic name of MEGACERCHNEIS, characterised by its larger size and different colour markings; it occurs quite commonly side by side with *C. rupicola* in South Africa, with parallels beyond our limits. Rhodesian specimens of *C. rupicola* differ from southern birds in being smaller (wing length 210–230 as against 225–255 mm.) with smaller markings on the back and head usually more streaked; this form has been named *rhodesi* by Finch-Davies (*Ibis*, 1920, p. 620).

BUBONIDAE

The Eagle Owls of South Africa are readily separated generically on size, and colour of the plumage, bill and iris. *Bubo capensis* represents the typical *Bubo*, but *B. africanus* (*maculosus* auct., cf. Neumann, *Journ. für Orn.*, 1914, p. 37) represents a smaller subgenus, for which the name of *Nisuella* Bonaparte is available. *B. lacteus* on the other hand represents a distinct genus, for which the name of *Nyctætus* Gloger is available. The South African Scops Owls should be placed in the genus *Pisorhina*, type *Scops menadensis* Quoy and Gaimard, characterised by the shape of the wing; our species has been subspecifically separated as follows (cf. Gunning and Roberts, *Ann. Transvaal Mus.* III. III, 1911): *Pisorhina capensis capensis* (A. Smith), type locality Grahamstown, *P. c. grisea*, type locality Bethulie, O.F.S., *P. c. intermedia*, type locality Pretoria, and *P. c. pusilla*, type locality Boror, P. E. Africa.

The White-faced Scops Owl has been placed under *Asio* by Reichenow and under *Scops* by Sharpe and other authors; but there is no reason why it should be referred to either, a generic name having been provided for it by Kaup, namely *Ptilopsis*, type *Strix leucotis* Temminck. The form occurring in South Africa was given the name of *erlangeri* by Ogilvie-Grant; but more recently Kollibay (*Orn. Monatsb.* 1910, p. 148) has renamed it *granti*, *erlangeri* being preoccupied.

The two species commonly referred to *Glaucidium* should be placed in different genera, *Microglaux*, type *Strix perlata* Vieillot and *Smithiglaux*, type *Noctua capensis* A. Smith. *Asio capensis* A. Smith should be referred to the genus *Phasmaptynx* of which it is the genotype.

TYTONIDAE

Strix + *Flammea flammea* + *maculata* = *Tyto alba affinis* (cf. Mathews, *Austral. Av. Rec.* 1. 104, 1912, and C. Grant, *Ibis*, 1915, p. 258).

Strix capensis = *Tyto capensis* (cf. Mathews, *l.c.*).

There is a very pale specimen of this owl from "Damaraland," taken by C. Wilde, in the Transvaal Museum collection, which is so very different from typical specimens that I propose to name it *TYTO CAPENSIS DAMARENSIS* subsp. nov.; the facial disc, whole of the underparts of the body and under surface of wings and tail are almost pure white instead of fulvous, the upper parts with very faint indications of white spots and the dark spots on the underparts of the body very small. The lower disc feathers show hardly a trace of brown. In size also it appears to be smaller than the typical form, the wing measuring 285 mm., as against 320, the tail 114, as against 120, the tarsus 65, as against 72, and the culmen 19.5, as against 21. The precise locality is not stated on the label, but it seems most probable that the specimen was secured in passing in the Caprivi Corner on one of Wilde's hunting trips.

PSITTACIDAE

The genus *Poicephalus* contains four well-defined groups of species, which may be differentiated as follows:

1. Bill pale above and below, wing over 7 inches in length, culmen over 1 inch in length: *P. robustus* and allies.
2. Maxilla pale, mandible dark, wing over 7 inches, culmen over 1 inch: *P. gulielmi*.
3. Maxilla dark, mandible pale, wing under 7 inches, culmen not over 1 inch: *P. fuscicapillus* and *P. flavifrons*.
4. Entire bill dark, wing under 7 inches, culmen under 1 inch: *P. senegalensis*, *rufiventris*, *meyeri* and *ruppelli*.

The fourth group represents the typical *Poicephalus*, the third may be placed in a new subgenus, *MICROPSITTACUS*, type *Pionus fuscicapillus* Verr. and Des Murs, the second in a new subgenus, *EUPSITTACUS*, type *Pionus gulielmi* Jardine, and the first in a new subgenus *NOTOPSITTACUS*, type *Psittacus robustus* Gmelin. With regard to the last subgenus, three easily distinguished forms occur within our limits, and it is possible that these will eventually prove to be distinct species when material becomes available. They are distinguished by the following characters:

Poicephalus robustus robustus (Gmelin). Region of the crop yellowish, back very dark, hind neck yellowish olive, forehead not (or very seldom) red; height of lower mandible not more than 19 mm.

P. robustus suahelicus Rchw. Region of the crop greyish, back yellowish green, hindneck grey, forehead broadly red, usually also with a suffusion of red over the head and throat; height of the lower mandible about 22 mm., its width at the base under 25 mm.

P. robustus angolensis Rchw. Region of the crop greyish, back dark green, hindneck olive, forehead seldom red; height of lower mandible about 22 mm., its width at the base about 25 mm.

Palaeornithidae = Psittaculidae (cf. Mathews, *B. Australia*, vi. 169, 1917).

CORACIIDAE

Oberholser (*Proc. U.S. Nat. Mus.* xxviii. 859, 1905) has separated the species of *Coracias* into two genera, reviving the name of *Coraciura* for the second one. A still further division should be made on the characters of wing and tail, not to mention the colour characters which lend support thereto, and I propose to place them as follows:

1. Outer tail feathers not prolonged:

A. Outermost primary longer than the fourth: *Coracias*.

B. Outermost primary shorter than the fifth: EUCORACIAS gen. nov., type *Coracias mosambicus* Dresser.

2. Outer tail feathers prolonged:

A. Long tail feathers pointed: *Coraciura* Bp.

B. Long tail feathers spatulate: TRIMENORNIS gen. nov., type *Coracias spatulatus* Trimen.

Our chestnut Rollers should not be referred to the genus *Eurystomus*, which consists of greenish coloured species, and we should therefore utilise the name of *Cornopio* Cabanis, of which *C. glaucura* (St Müll.) is the genotype. The form of *Cornopio afra* occurring within our limits should bear the subspecific name of *suahelica* (Neumann, *Journ. für Orn.* 1905, p. 184), the typical form being found in Senegal.

ALCEDINIDAE

Mathews (*B. Australia*, vii. 141-162, 1918) has cleared up much of the misconception previously existing as to the generic status of the species commonly lumped together under *Halcyon*. I had already decided two years before the appearance of Mathews' rearrangement that the species *albiventris*, *leucocephala* and *senegaloides* should be separated, from which it will be seen that I differed from Mathews only in reference to *leucocephala*; and even in this exception, Mathews appears to have been in some doubt as to the advisability of placing it under *Chelicutona*. Several important characters leave no doubt in my mind that *leucocephala* should receive full generic rank. *Chelicutona albiventris* lacks the white wing-pattern, and in this respect comes nearer to *Sauropatis* than any of the allied African genera. We may regard the general plain coloration of this species and *Chelicutia chelicuti* as being due simply to their living normally under drier conditions of environment, such as are not suited to the development of a high standard of coloration; their similarity in this respect is therefore of homological rather than genetic significance. The colour pattern of the under surface of the wing, on the other hand, has not been affected by the conditions of environment to the same extent, and may therefore be taken to be of genetic value. Furthermore, the bill of "*Halcyon*" *leucocephala* is like that of *Sauropatis*, that is, the culmen is level, not depressed at the tip as in the other African species. We find therefore that *Chelicutona* resembles *Sauropatis* in the wing-pattern, *Chelicutia* resembles it in the shape of the wing and "*Halcyon*" *leucocephala* resembles it in the shape of the bill. In view of these differences, I propose for *H. leucocephala* P. L. S. Müller the new generic name of PSEUDHALCYON. The South African species must now stand as follows:

Halcyon cyanoleucus.

Halcyon (Halcyonops) senegaloides.

Pseudhalcyon swainsoni.

Chelicutia chelicuti.

Chelicutona albiventris albiventris.

C. albiventris orientalis.

Ceryle rudis and *C. maxima* obviously belong to distinct genera. In the former the difference between the tips of the first primary and the longest secondaries is more than twice the length of the tarsus, while in the latter the difference is less than the length of the tarsus; the difference in colour and size is also very marked. The generic name of *Megaceryle* should be used for *maxima*.

Corythornis cyanostigma = *C. cristata* (Vroeg) (cf. C. Grant, *Ibis*, 1915, p. 263).

BUCEROTIDAE

"*Bycanistes*" *cristatus* (Rüppell) should be placed in a new genus bearing the name of BARYRHYNCHUS, of which it is the genotype; it differs from *Bycanistes bucinator* Temminck in size, in having a very large, inflated casque, and a style of coloration more like that of *Sphagolabus*.

The genus *Lophoceros* as now contained in standard works may be divided into a number of well-defined genera, as follows:

Lophoceros, type *L. nasutus*: bill finely pointed, the tomia always much toothed, the casque well-developed in the male, equal to two-thirds of the length of the bill, its anterior end projecting forward above the level of the culmen; tail shorter than the wing.

Tockus Lesson, type *Buceros erythrorhynchus* Temminck: bill longer and more slender than in *Lophoceros*, the tomia not toothed, casque feebly developed, consisting of a mere ridge, extending farther forward, however, than in *Lophoceros*; and disappearing in a downward slope anteriorly; tail of about the same length as the wing, the secondaries shorter than the longest primaries.

Rhynchaceros Gloger, type *Buceros melanoleucus* Licht.: bill larger and stouter than in *Lophoceros*, the tomia not toothed and the casque heavy, three-fourths of the length of the culmen, clearly terminating anteriorly, but not projecting forward as in *Lophoceros*; tail shorter than the wing.

Xanthorhynchus gen. nov., type *Buceros leucomelas* Licht.: bill very long, conspicuously and evenly arching, normally not toothed, though sometimes slightly chipped; length of the culmen about two and a half times the height at the nostrils; casque forming a high ridge, evenly arching with the bill, from which it is marked off by a shallow groove extending to a point not far from the tip; wing and tail of about the same length; secondaries as long as the primaries.

Nototockus gen. nov., type *Tockus monteiri* Hartlaub: bill still longer than in *Xanthorhynchus*, but not so conspicuously arched; tomia not normally toothed; casque in the form of a high ridge, extending nearly to the end of the bill and marked off by a deep groove, above which the casque has several more or less shallow grooves; length of the culmen three times the height at the nostrils; tail much longer than the wing.

With regard to species, C. Grant (*Ibis*, 1915, p. 273) separates South African examples of *Tockus erythrorhynchus* under the subspecific name of *caffer* Sundevall; but as the name is preoccupied by *Buceros nasutus caffer*

Dumont, it must be replaced by that of *rufirostris* Sundevall. Grant has, at the same time, rejected the name of *Lophoceros* (= *Tockus*) *damarensis* Shelley, on the assumption that the type is albinistic; but there are now eight specimens of *damarensis* in the collection of the Transvaal Museum, proving it to be a valid species.

UPUPIDAE

Mathews (*Austr. Av. Rec.* III. 146, 1918) finds *Irrisor* must in future be known by the name of *Phoeniculus* Jarocki, and according to Sherborn and Iredale (*Ibis*, 1921, p. 306) the specific name of *purpureus* (Miller) must be used in place of *erythrorhynchus* (Latham). C. Grant (*Ibis*, 1915, p. 281) has pointed out that *Irrisor erythrorhynchus* (Latham) and *I. viridis* (Lichtenstein) are most likely synonymous and gives Knysna as the type locality for both; but, while they are synonymous, it may be pointed out that the type of the former was most likely taken by Lieut. Paterson, who only once mentions in his *Travels* in the eastern province having prepared specimens of birds, namely, while encamped near the Great Fish River (p. 95); and as another specimen (obviously a young one of this species) was said to have been collected by him in "India" and figured and named by Latham at the same time as *erythrorhynchus*, it is reasonable to conclude that Paterson shot both specimens from a family party of this bird, though Latham was not aware of the source of the type of *erythrorhynchus* (cf. Latham, *Syn. Suppl.* 1787, p. 124). There is also good reason for thinking that the collection catalogued by Lichtenstein in 1793 comprised part of Le Vaillant's collection; and if so, we find that Le Vaillant mentions this bird on several occasions in his *Travels*, notably on the Great Fish River (cf. Vol. I. (English Edition), p. 240), which may therefore be taken as the type locality, and therefore the same as that of *erythrorhynchus*.

Phoeniculus purpureus angolensis Rehw. and *P. p. brevirostris* (Gunning and Roberts) (cf. *Ann. Transvaal Mus.* III. 113, 1911 and v. 255, 1917) should be added to our list.

Rhinopomastus cyanomelas schalowi Neumann has been recorded from the lower Zambesi valley by Sclater (*Ibis*, 1911, p. 697) and an intermediate form has been described by me from the eastern Transvaal as *R. c. intermedius* (cf. *Ann. Transvaal Mus.* IV. 171, 1914).

MEROPIDAE

Two species of *Melittophagus* are admitted to our list, but the larger of these, *M. bullockoides* (A. Smith) should be removed to the genus *Coccolarynx* Reichenbach, characterised by having the tail feathers squared and of about equal length. *Dicrocercus* and *Melittophagus*, which are commonly admitted as genera, are more closely allied than *Coccolarynx* is to either; and yet *Coccolarynx* is placed in the synonymy of *Melittophagus*! *Merops* should be recognised for the red-backed species alone, the others being grouped as follows:

Melittotheres Reichenbach, for *M. nubicoides*, on its bill.

Blepharomerops Reichenbach for *M. persicus* and *M. superciliosus*.

Micromerops gen. nov., type *Merops boehmi* Reichenow, characterised by its smaller size and more rounded wing.

Blepharomerops superciliosus has been recorded from within our limits by Sclater (*Ibis*, 1911, p. 705).

CAPRIMULGIDAE

The genus *Caprimulgus* of text-books contains a number of generic groups which should be recognised, taxonomers having been misled by the similarity of their plumage, small, but important, differences being ignored. *Caprimulgus europaeus*, the type of *Caprimulgus*, is characterised by its long wings (measuring over 8 inches in length) and in having only the second and third primaries emarginate on the outer web, the emargination situate anterior to the tip of the fifth primary. The other South African species all have the fourth as well as the preceding three emarginate on the outer web. Of these, *C. trimaculatus* Swainson is readily differentiated from the rest by its greater size, the wing measuring over seven inches in length; it may be given generic rank under the name of NYCTICIRCUS gen. nov. Of the remaining species, *C. rufigena* A. Smith may be given generic rank under the new name of NYCTICTYPUS, characterised by having the outermost primary longer than the fourth, which is always short of the third by about the length of the tarsus. *C. pectoralis* and *C. fervidus* have the proportion of the length of the tail to the wing about the same as in *Nyctictypus* (75-80 per cent.), but are slightly larger in size and have the outermost primary shorter than the fourth; these species may be referred to a new genus, NYCTISYRIGMUS, genotype *C. pectoralis* Cuvier. *C. fossei* Hartlaub has the outermost primary equal to the fourth and the tail 80 to 90 per cent. of the length of the wing; I would refer it to a new genus bearing the name of CROTEMA. Finally, *Caprimulgus natalensis* A. Smith, monotype of the genus *Capripeda* Bonaparte (cf. Richmond, *Proc. U.S. Nat. Mus.* LIII. 582, 1917) differs from all the preceding in having the tail only about two-thirds of the length of the wing, the tarsus very little feathered, but with the wing formula of *Nyctisyrigmus*.

C. Grant (*Ibis*, 1915, p. 306) recognises *Caprimulgus lentiginosus* A. Smith as a subspecies of *trimaculatus*. Our Standardwing Nightjar should bear the generic name of *Cosmetornis*, not *Macrodipteryx*.

MACROPTERYGIDAE

Oberholser (*Proc. U.S. Nat. Mus.* xxviii. 860, 1905) has separated the African Palm Swifts under the generic name of *Tachynautes*; at the same place he has recognised eastern and western subspecies based upon the wing length instead of the coloration; but, according to specimens in the Transvaal Museum collection, the wing length appears to vary, but eastern specimens (Beira and Boror) are dark (agreeing with the description of *myochrous* Reichenow) and a western (Walvis Bay) specimen is very pale, apparently referable to *parvus*.

The generic name of *Apus* is rejected by Oberholser (*l.c.*) owing to the earlier use of the name of *Apos*, the name of *Micropus* being used instead. This genus contains too many widely different groups to be considered a natural genus as it now stands. I would therefore classify them as follows:

1. Size very large, wing well over $7\frac{1}{2}$ inches in length; abdomen white, rump not white: **Tachymarptis** gen. nov., type *Hirundo melba* L.
Size smaller, wing under $7\frac{1}{2}$ inches in length; abdomen not white: 2.
2. Rump white: 3.
Rump not white: *Micropus*.

3. Tail very deeply forked, for more than an inch: **Caffrapus** gen. nov., type *Cypselus caffer* Licht.
 Tail slightly forked, for about .5 to .8 inch: **Epicypselus** gen. nov., type *C. horus* Heugl.
 Tail not forked, or for less than .25 inch: **Colletoptera** gen. nov., type *C. affinis* Gray.

With regard to species, C. Grant (*Ibis*, 1915, p. 315) records the occurrence of *Micropus murinus brehmorum* Hartert (Naum., *Vög. Naturg. Deutschl.* iv. 233, 1901) in Damaraland, and states that *M. kalaharicus* Reichenow (*Orn. Monatsb.* 1908, p. 81) is a synonym of *M. apus pekinensis*. *M. aequatorialis* (v. Mull.) has been recorded from Gazaland by Swynerton (*Ibis*, 1908, p. 393). There is a specimen of *Colletoptera horus* (Heuglin) in the Transvaal Museum collection from Beira, taken by P. A. Sheppard, and I have found it breeding at Koster, in April, 1922.

Mathews (*B. Australia*, vii. 264, 1918) has created three new genera for the African Spinetailed Swifts, namely *Telecanthura* for *Chaetura ussheri*, *Neafrapus* for *Chaetura cassini* and *Alterapus* for *Chaetura sabinei*. Two species of "*Chaetura*" have been recorded from within our limits, namely, *C. stictilaema* (presumably referable to *Telecanthura*) recorded by Alexander, from the Zambesi (*Ibis*, 1900, p. 93) and *C. anchietae* Souza by C. Grant (*Bull. Brit. Orn. Cl.* xxi. 66, 1908 and also *Ibis*, 1911, p. 698). Specimens in the Transvaal Museum collection recorded by Gunning and Haagner in their *Check List* (1910) as *Chaetura böhmi* Schal., following Reichenow, who placed *anchietae* in the synonymy of *böhmi*, evidently refer to the same species as that recorded by Grant. I find, however, that these specimens are not referable to either *böhmi* or *anchietae* on the length of the wing, and possibly on the colour. The descriptions of both *böhmi* and *anchietae* are not too clear. Souza and Bocage both distinguish *anchietae* from *böhmi* by the absence of black shaft stripes to the feathers of the throat and the black instead of white lores. In our series of specimens, eight from Beira and three from Machile River, the base of the feathers of the lores is pure, the external half black, partly hiding the white base. Reichenow compares *böhmi* with *cassini*, not making it clear that the under tailcoverts in *cassini* are black. The specimens from Beira and Machile River have the under tailcoverts white, the upper tailcoverts black, but with the middle ones white at the base like the rump. In regard to dimensions, in the original description of *C. böhmi* (*Orn. Centralb.* 1882, p. 183) and in subsequent repetitions, the tail length is given as 60 mm., which must be wrong, as the total length is given as only 90 mm. Reichenow gives the tail length as 30 mm., and in *anchietae* it is said to be about 27 to 28 mm. In our specimens, the eight from Beira give a wing length of 116-120 mm., tail 20-22 mm., and the three from Machile River, wing 118-123, tail 20-22. As regards generic allocation of these birds, Mathews has diagnosed them on the difference in size, the colour of the tailcoverts and the proportion of the tail to the wing. In *Neafrapus* the under tailcoverts are black, size large and the tail about one-fifth of the length of the wing and the outermost primary is as long as the second. In the Beira and Machile River specimens the middle of the breast, abdomen and under tailcoverts white, size small and the outermost primary decidedly shorter than the second. Having regard to these

differences, I would place these southern birds in a new genus under the name of *NOTAFRAPUS*, type *NOTAFRAPUS SHEPPARDI* spec. nov., characterised as follows:

Size very small, wing length 116 mm., tail 22, tarsus 7.5, culmen 4.5. Colour, upper parts glossy blue-black, the forehead greyer, the rump, base of middle upper tailcoverts and tips of tail feathers (not the spines) white; lores black, but pure white at the base; earcoverts dark grey, darker than underparts but not so dark as the forehead; underparts from the chest to the chin and sides of the neck smoky grey, sometimes with faint shaft stripes on the throat; flanks greenish slate-brown; middle of the breast, abdomen and under tailcoverts white; thighs black. Type in the Transvaal Museum, No. 10166, *ex* collection P. A. Sheppard, Beira, 15 March, 1910.

COLIIDAE

Oberholser (*l.c.*, p. 863) has separated *Colius indicus* under the generic name of *Urocolius* Bonaparte, with which I agree, this species having the outermost primary longer than the secondaries, the tail feathers narrower, the nasal cavity quite exposed, large and semicircular and the basal section of the maxilla below the nostrils flattened and hardly raised above the level of the lores. *C. striatus* Gmelin should also be separated under the name of *Rhabdocolius* Bonaparte, the main difference being the uniform colour of the back. With regard to local races, I cannot, on the available material, distinguish *damarensis* from the typical *C. colius* of Cape Town. *C. kirbyi* Sharpe is said to be a synonym of *C. striatus minor* (cf. C. Grant, *Ibis*, 1915, p. 402).

I am able to distinguish three forms of the Redfaced Coly, as follows:

- A. Forehead ochre-yellowish: *Urocolius indicus indicus*.
- B. Forehead creamy white: *U. indicus lacteifrons* Sharpe from Damaraland.
- C. Forehead rich cream colour: *U. INDICUS TRANSVAALENSIS* subspec. nov., type from Pretoria, in the Transvaal Museum collection, and also a long series from this province.

MUSOPHAGIDAE

Turacus corythaix phoebus Neumann (*Orn. Monatsb.* 1907, p. 198), from the eastern Transvaal, is a well marked subspecies and has much the same relation to the typical green form as *T. reichenowi* has to *T. livingstonei*, which occur within our limits in the tropical low-country of the north-east (cf. Sclater, *Ibis*, 1911, p. 737).

Chizaerhis concolor pallidiceps Neumann, has been recorded by Ogilvie-Grant from within our north-western limits (cf. *Ibis*, 1912, p. 397). According to Mathews (cf. *Austral. Av. Rec.* III. 146, 1918) the name of *Crinifer* Jarocki must be used for this genus.

CUCULIDAE

Coccytes Gloger (1842) gives way to *Clamator* Kaup (1829), type *C. glandarius* L. (cf. Richmond, *Proc. Biol. Soc. Washington*, xv. 37, 1907). This group of Cuckoos contains several distinct genera which have only a crest to distinguish them in common. The typical species, *Clamator glandarius*, lays large, greenish, speckled eggs, while in itself differs in its style of coloration, the first primary as long as the secondaries, the second and fifth equal and the third and fourth primaries equal and longest. The

remaining species lay immaculate eggs, so far as present records go. *Oxylophus* Swainson, type *Cuculus cafer* Lcht., which lays greenish-blue eggs, has the first primary much shorter than the secondaries, the second equal to the seventh, fourth and fifth equal and longest and the third rather shorter than the fourth and fifth; it is also larger than the following species and is further distinguished by having the underparts white with bold dark stripes. *Melanococcyx* Wurt. (cf. Richmond, *Proc. U.S. Nat. Mus.* LIII. 602, 1917) is evidently a synonym of *Oxylophus*. The name of *Edolius* Lesson (1830), type *Cuculus serratus* Sparrmann, is preoccupied by *Edolius* Cuvier (1817), and I therefore re-name it **MELANOLOPHUS**, type *C. serratus* Sparrmann; this genus is characterised by having the first primary slightly shorter than the secondaries, the second primary equal to the sixth, the third and fifth equal and shorter than the fourth, which is longest. *C. jacobinus* Boddaert might be placed in a new subgenus under the name of **CECRACITES** on the difference in colour, the shape of the wing the same as in *Melanolophus*, in common with which it lays pure white eggs.

The genus *Cuculus* as contained in text-books comprises a number of distinct genera, three of which are represented in South Africa, namely:

Cuculus Linné, type *C. canorus* L.: colour grey and white; outermost primary equal to or longer than the seventh, the second equal to the fourth and the third longest.

Notococcyx gen. nov., type *Cuculus solitarius* Stephen: colour slate, white and reddish; wing shorter than in *Cuculus*, the first primary shorter than the eighth, second shorter than the fourth. It comes nearest to *Cacomantis* of Asia, from which it differs in having the tail feathers more rounded.

Surniculoides gen. nov., type *Cuculus clamosus* Latham: colour entirely black; wing formula as in *Notococcyx*; but rump feathers more plume-like. It is most closely allied to *Surniculus* of Asia, from which it differs in having the tail rounded, not squared or forked.

Mathews (*Austral. Av. Rec.* 1. 4, 1912) has shown that the type species of *Chrysococcyx* Boie is *Cuculus cupreus* Latham, the equivalent of *C. smaragdineus* Swainson, and that *Metallococcyx* Reichenow is therefore a synonym, while the two species commonly referred to *Chrysococcyx* should be placed under *Lampromorpha*, type *L. chalcopepla* Vigors (= *cupreus* Boddaert). Recent authors have not adopted Mathews finding that the names of *C. caprius* Boddaert and *C. cupreus* Latham are identical, the former having been printed *caprius* in error; but I must admit, after studying Boddaert's paper, that I am of Mathew's opinion, this paper abounding in misprints, and the adoption of this reading obviates possible confusion of two very distinct species. "*Chrysococcyx*" *klaasi* (Stephen) is much smaller than *cupreus*, side by side with which it occurs quite commonly during the breeding season, and it may therefore be separated under the name of **ADAMATORNIS** gen. nov.

Bannerman (*Ibis*, 1912, p. 244) has shown that two species of Emerald Cuckoo are commonly confused, the typical one being resident in West Africa and the other dispersed over Africa, occurring to the southernmost parts of the continent as a migrant. The migrant must bear the name of *Chrysococcyx intermedius* Hartlaub; it differs in having the tail shorter in proportion to the wing, and may therefore be separated as a new subgenus under the name of **ADETOCOCCYX**.

The Lark-heeled Cuckoos may be separated as follows: *Centropus* Illiger, type *Cuculus senegalensis* L. Size intermediate; colour, buffy white below, head metallic coloured. *Centropus superciliosus* Hempr. and Ehr., which lacks the metallic colour of the head might perhaps be given sub-generic place to obviate confusion where members of the two groups occur side by side.

Megacentropus gen. nov., type *Centropus cupreicaudus* Reichenow: size largest; colour, much the same as in *Centropus*, though darker. It comes nearer to *Pyrhocentor* Cabanis, type *Centropus celebensis*, than *Centropus*, but differs in its longer wings and shorter tail.

Grillia gen. nov., type *Centropus grilli* Hartlaub: size smallest; colour, entirely black on the underparts of the body. This genus comes nearest to *Corydonyx* Vieillot, type *Centropus toulou*, but differs therefrom in its shorter, more arched bill, longer wings and shorter tail.

All records of *Centropus senegalensis* from South Africa should be referred to *C. s. flecki* Rchw. C. Grant (*Ibis*, 1915, p. 428) records the occurrence of *C. burchelli fasciopygialis* in the lower Zambesi valley, as also *C. superciliosus*. *C. pyimi* (Rbts. *Ann. Transvaal Mus.* iv. 175, 1914) described from Kaffraria should be added to our list as a subspecies of *C. superciliosus*. Neumann (*Bull. Brit. Orn. Cl.* xii. 75, 1902) has shown that the name of *Centropus nigrorufus* is not applicable to the African Black Coucal, and that the name of *Centropus* (= *Grillia*) *grilli* Hartlaub must replace it. C. Grant (*l.c.* p. 420) has described a specimen of this species from Durban under the name of *Centropus grilli wahlbergi*, to which he apparently also refers my record of *C. grilli caeruleiceps* Neumann from Sabi, Transvaal.

INDICATORIDAE

Oberholser (*l.c.* p. 870) has separated the Lesser Honeyguide under the generic name of *Melignotheres* Cassin, on the shape of the bill; but this character is somewhat variable and a better one is to be found in the shape of the nasal apertures, which are tubular and project above the surrounding membrane, this differing in the Greater Honeyguide in being more flattened slits. In *Indicator variegatus* Lesson the nostrils are very similar to those of *Melignotheres*, but it differs otherwise in having the mandible less swollen and in size equals the Greater Honeyguide; I would therefore separate it as well, under the new generic name of MELIPODAGUS, type *I. variegatus* Lesson. With regard to species, the late Captain Boyd Alexander was the first to point out (*Bull. Brit. Orn. Cl.* xxi. 91, 1908) that the Greater and Yellow-throated Honeyguides are synonymous, which is borne out by specimens in the Transvaal Museum, which are moulting from the yellow to black plumage on the throat; the black on the head would seem to be the adult plumage of the male alone. There is a general misconception in literature that the typical Lesser Honeyguide occurs throughout our limits; but examination of our material shows that the olive colour of the throat in typical birds from the Cape Province gives way to pure white in the tropics. I therefore name the northern form MELIGNOTHERES MINOR ALBIGULARIS, subspecies nova, the type an adult male from Woodbush, north-eastern Transvaal, in the Transvaal Museum collection; in size it does not differ from typical specimens from the Cape Province, but in the Lower Zambesi valley becomes smaller, greyer on the head and in general rather

paler. To reduce the subspecies to refinement, more could be named from our material, the gradation being apparent from south to north; but for the present this does not appear to me to be necessary until abundant material becomes available, so that the limits can be more clearly defined. In the Cape Province as elsewhere there is a wide range in size, the smaller birds being females or immature males.

Prodotiscus represents a distinct family, characterised by its pointed bill and ten instead of twelve tail feathers, and may of course be known as PRODOTISCIDAE.

CAPITONIDAE

Barbatula = *Pogoniulus* Lafrsn. (cf. Oberholser, *l.c.* p. 867, and Richmond, *Proc. U.S. Nat. Mus.* xxv. 634, 1909). I consider, however, that the three species occurring within our limits cannot be referred to the same group, *Megalaema bilineata* Sundevall differing from the other two, more typical, species in having the top of the head to the back uniform glossy blue-black and the bill larger, although the bird itself is smaller; this species I therefore propose to remove to another subgenus under the name of MICROPOGONIUS.

Buccanodon woodwardi = *Stactolaema woodwardi* (cf. Oberholser, *l.c.* p. 866).

B. sowerbyi and *B. leucotis* = *Smilthoris* (cf. *idem*).

Tricholaema leucomelan (Boddaert), of which *Tricholaema affine* Shelley is a synonym, the characters being those of immature birds, as pointed out by Neumann, *Journ. für Orn.* 1910, p. 197, should be removed from the genus, the type species of which (*T. hirsutum*) is much larger and has the bristles of the face extremely long, reaching to the end of the bill; I therefore place it in a new genus under the name of NOTOPOGONIUS, type *Bucco leucomelas* Boddaert.

Trachyphonus cafer (Vieillot) should give way to *T. vaillanti* (Ranz.), *Picus cafer* Vieillot (1818) being preoccupied by *P. cafer* Gmelin (1789). *T. nobilis* Ogilvie-Grant (*Ibis*, 1912, p. 397) must have been founded upon an aberrant individual, typical *vaillanti* being found in the neighbouring countries on all sides.

PICIDAE

Dendromus Swainson is preoccupied by *Dendromus* A. Smith, and the name of *Campethera* Gray must therefore be used. This genus is represented in South Africa by only one species, *Campethera malherbei fullebornei* (Neumann, *Journ. für Orn.* 1900, p. 204), the other species being referable to different genera. *Campethera* is characterised by its small size, and the bill of about the same length as the tarsus, the remaining South African species having the bill longer than the tarsus. The larger genus must bear the name of *Chrysophilopicus* Malherbe (*Rev. Zool.* 1845, p. 403) which was given in subgeneric form in the naming of *Picus smithi*; the author subsequently used the name of *Chrysopicus* with *P. nubicus* Gmelin as the genotype, evidently with the intention of abbreviating the name; but whatever his intention may have been, the two names must stand to represent two subgenera. The typical *Chrysophilopicus* must contain the type species and *C. abingoni* A. Smith, and the subgenus *Chrysopicus* would include our species *C. bennetti* (A. Smith) and *C. capricornis* (Strickland and Scl.). The single species *P. notatus* Lichtenstein is characterised by its entirely different style of coloration and has the tail longer in pro-

portion to the wing than in the preceding, the wing itself more rounded in shape. I make it the type of a new genus NOTOPICUS.

Thripias has lately been lumped with *Mesopicus*, but there is no sound reason why this should be done.

C. Grant adopts the name of *Dendropicus fuscescens* Vieillot in preference to *guineensis* and *cardinalis*, while *D. hartlaubi* is considered a subspecies of *D. abyssinicus* (cf. *Ibis*, 1915, p. 460). In the same place, Grant places *Campethera malherbei* as a synonym of *C. cailliautii*. *C. capricornis* of Damaraland is a very well-marked form, though possibly only a subspecies of *bennetti*.

PITTIDAE

Finsch (*Notes, Leyden Mus.* XXIII. 206-212, 1903) has shown that Reichenow's *Pitta longipennis* is identical with *P. angolensis*, which name should therefore be used for the species occurring within our limits. The Transvaal Museum possesses an immature specimen taken by P. A. Shepard at Beira, an adult which flew into a house at night in Pietersburg and an adult which was found dead under some tall trees in a garden at Potchefstroom.

HIRUNDINIDAE

Sharpe and Wyatt's beautiful *Monograph of the Swallows* contains a reference to the importance of the nesting habits of the species for generic differentiation; but the genera were, nevertheless, not very carefully chosen, a number of well-marked genera being overlooked. In the genus *Hirundo* alone they lumped together widely different species that have little affinity to the typical ones. *Hirundo rustica*, the type species by general consent, has the nostrils opening through a narrow sublateral slit, the covering membrane being broad; the tips of the wings reach beyond the tips of the penultimate tail feathers and the forking of the tail (that is, taking the distance between the tips of these feathers and of the middle tail feathers, when folded together) greater than the length of the tarsus. Its nest is a shallow, open structure of mud lined with thin fibres and feathers and attached to some perpendicular rock or wall, close up under an overhanging ledge or roof; its eggs are white, abundantly spotted with slate, brown and reddish markings. *H. albigularis* (Strickland), which breeds in South Africa, where *H. rustica* is a non-breeding migrant, differs from the typical species in that the wings do not extend beyond the tip of the "streamer" or outermost tail feather and it might, therefore, be subgenerically separated, if thought necessary. Another genus is to be found in *H. filifera*, genotype of *Uromitris* Bonaparte, and represented in South Africa by *smithi*, which has the forking of the tail to the tip of the penultimate feather not as deep as the length of the culmen, though the "streamer" is very long and narrow; its nest and eggs are similar to those of *Hirundo*, except in size. Another genus is to be found in *H. atrocaerulea* Sundevall, for which I propose the name of NATALORNIS, gen. nov., characterised by having the tail deeply forked (to the penultimate feather equal to the length of the tarsus, foot and first joint of the middle toe), the outermost tail feather in the male longer than the wing and the whole plumage blue-black in colour; its nest is of the same pattern as that of *Hirundo*, but the eggs have a more pearly gloss, though marked in much the same way.

Even without knowing the habits of "*Hirundo*" *dimidiata* Sundevall, genotype of *Hemicecrops* Bonaparte, it is obvious from the absence of white tail marks that it is not correctly allocated with the true Swallow; and when we examine further, we find this confirmed by the eggs being white and the bird being reputed to occupy the nests of other birds, characters and habits which indicate affinity to the American genus *Tachycineta*; but as the African species has the tail more deeply forked, *Hemicecrops* may be retained for generic purposes.

In the Mosque Swallows the tip of the wing does not extend beyond the tip of the penultimate tail feather, correlated with which we find the species building mud nests, with long tubular entrance, against some overhanging roof or shelter, and the eggs pure white. These species were long ago separated under the generic name of *Cecropis* Boie, type *Hirundo cucullata* Boddaert, and they are characterised by having the nostrils with a narrower superior membrane than in *Hirundo*, the forking of the tail of about the same depth, but the underparts of the body striped. The smaller species, *H. puella*, might be considered subgenerically different. The Red-breasted Swallows should, however, be placed in another genus, characterised by having the tail more deeply forked and the underparts of the body not striped, usually reddish in colour; the nest is similar in shape to that of *Cecropis* but built, as a rule, in a more sheltered situation, such as the roof of a hole in a river bank, hollow horizontal branch of a tree, though sometimes in culverts also occupied by the stripe-breasted group. For this group I propose the name of PHOENICHELIDON gen. nov., type *H. semirufa* Sundevall.

In the synopsis of the species in the monograph above mentioned, and in the *Catalogue of Birds in the British Museum*, the Mosque Swallows are grouped with the true Swallows on the character of the nostrils; but this is misleading, the former having only a narrow superior membrane compared with the latter. Similar disregard for structural characters has led astray the allocation of the Grey-rumped Swallow, *Hirundo griseopyga* Sundevall, which differs entirely in its weak and very small bill, the nostrils slit-like and wider open than in *Hirundo*, the forking of the tail much the same as in *Hirundo*, but the "streamer" shorter, and in size and colour more nearly approaching the Sand Martins; its nest is also said to be situated in a hole in the ground (cf. Sheppard, *Journ. S. Afr. Orn. Un.* v. 35, 1918), and doubtless its eggs will prove to be white, the species seeming to have an affinity to *Hemicecrops*. No generic name being available, I propose to place the species in a new genus under the name of PSEUDHIRUNDO, type *Hirundo griseopyga* Sundevall.

Passing now to the species commonly lumped with the Sand Martins, it is clear that systematists have in the past been led astray by superficial appearance, little regard having been given to structure. The Rock Martins are lumped with the Sand Martins, simply because they are plainly coloured! But, having regard to the nature of the nest, eggs, white spots on the tail, there seems to be no reason why the Rock Martins should not be placed close to the typical *Hirundo*, the squared tail distinguishing them therefrom. I have frequently observed the species nesting in Pretoria in the height of winter, and consider it not unlikely that this habit has some relation to its plain coloration, although it breeds of course in the summer as well.

Having removed this genus, *Ptyonoprogne*, from the Sand Martins, further separation is still necessary, *Hirundo cincta* Boddaert differing from all other South African species in having a patch of sharp bristles on the lores; besides this, it has an entirely differently shaped bill, which is very broad and stout, the nostrils round and quite exposed and in size it is much larger than the Sand Martins. I propose, therefore, the new generic name of NEOPHEDINA, type *H. cincta* Boddaert.

The typical *Riparia* is characterised by a tuft of feathers behind the foot, the wings long and extending beyond the tail, which is deeply forked, and the nostrils covered by a superior membrane. The species found in Africa have no tuft of feathers behind the foot and the wings hardly reach beyond the end of the tail which is not deeply forked. No name being available for this group, I propose to call it CHEIMONORNIS gen. nov., type *Hirundo paludicola* Vieillot.

A specimen of *Ptyonoprogne rufigula* taken in Nyasaland by Mr C. F. Belcher has recently been sent to the Transvaal Museum for identification, and in comparing this species with the series of *P. fuligula* from South Africa it became apparent that an error needs correction. The darker coloured birds from the eastern escarpment area have been generally taken to be typical of the species; but the type locality is given as "Kaffraria," and I therefore nominate Grahamstown as the exact locality whence it was obtained; specimens from Grahamstown agree exactly with the original description, and specimens from the western area (Klaver, Cape Town and Windhuk specimens examined) do not differ appreciably therefrom, so that the subspecies *anderssoni* must be regarded as doubtful. The specimens from farther north on the east, however, are much darker on the underparts of the body and slightly darker on the upper, and to these I give the name of PTYONOPROGNE FULIGULA PRETORIAE subsp. nov. The type is in the Transvaal Museum collection, No. 10774, taken at Pretoria in September, 1914.

Oberholser has shown (*l.c.* p. 933) that East African specimens of *Cecrops puella* are larger than the typical ones from West Africa, and should be known as *C. p. abyssinica* (Guerin); but Sclater and Mackworth-Praed (*Ibis*, 1918, p. 719) have more recently made a still further separation, naming those from South Africa *puella unitatis*.

According to the *List of British Birds* (1915) compiled by the British Ornithological Union Committee, *Delichon* must be used for *Chelidon*, which is preoccupied; but the type of the genus *Delichon* is not congeneric with the European species which migrates to Africa, as was pointed out when the genus was named, so that we must use the name of *Chelidonaria* Reichenow.

MUSCICAPIDAE

Oberholser (*l.c.* p. 910) has separated *Alseonax caerulescens* (Hartlaub) under the new generic name of *Cichlomyia*, with which arrangement I concur, on the basis of the shorter and stouter tarsus and foot and six tarsal scales, *Alseonax* having a small and delicate tarsus and foot and a single plate covering the upper portion of the tarsus, with only a few small scales on the lower part.

Parisoma is usually associated with the Tits, but there seems to be no reason for doing so beyond the fact that *P. plumbeum* has the nostrils

covered by the frontal plumes; but as the typical *Parisoma* has the nostrils exposed, I propose for *Parisoma plumbeum* Hartlaub the generic name of MYIOPARUS, characterised also by its smaller size, more slender legs and feet, and by so doing remove the group from its association with the Tits. I may mention that I have found both *Parisoma layardi* and *P. subcaeruleum* at Lamberts Bay, so that the colour difference of the under tail-coverts and markings on the throat may have to be regarded as sufficient for subgeneric differentiation.

The Black and White Flycatcher is recognised in generic status as *Sigelus*, the Black Flycatcher as *Melaenornis*, and there seems therefore no reason why the Large Brown Flycatcher should be retained in the same genus as the smaller species, and I therefore place it in a new genus under the name of HAGANOPSORNIS, type *Bradornis infuscatus* A. Smith, retaining the name of *Bradornis* for *mariquensis* and the northern species *murinus* and *griseus*.

Haagner's new genus and species, *Sheppardia gunningi* (J. S. African Orn. Un. v. 63, 1910), is doubtfully distinct from *Callene aequatorialis* Jackson (Bull. Brit. Orn. Cl. xvi. 46, 1905) from Nyasaland; but the generic name may perhaps be utilised when the genus *Callene*, as at present constituted, is more carefully organised, a matter which I cannot undertake in the absence of material for comparison. Until further comparison is made, therefore, the name should stand as *Callene aequatorialis gunningi* (Haagner).

With regard to species, *Muscicapa grisola* L. must give way to *M. striata* Vroeg (cf. B.O.U. List of British Birds, p. 371, 1915). Ogilvie-Grant (*Ibis*, 1913, pp. 636-637) has described three new subspecies of *Bradornis*, two of which occur within our limits, namely, *B. infuscatus seimundi* from the Central Cape Province to the Western Transvaal, and *B. i. benguellensis* from Benguella and Damaraland. *Cichlomyia caerulescens pondoensis* Gunning and Roberts (Ann. Transvaal Mus. III. 114, 1911) should be added to our list. *Batis sheppardi* Haagner (Ann. Transvaal Mus. I. 179, 1909) is apparently a synonym of *B. fratrum* Shelley (cf. *idem*, IV. 171, 1914). *Stenostira scita* (Vieillot) is undoubtedly a Flycatcher, though its association is obscure. In October, 1917, I discovered a nest of *S. scita* in the van Rhynsdorp District, Cape Province, containing two eggs; the nest was a very cosy, cup-shaped structure, composed of soft wool of the Red Hare and Sheep internally and externally of strips of decomposing grass and thin bark, stuck together with cobwebs and plant fibres, 42 mm. deep and 32 mm. across the inside, 55 mm. in height and 60 mm. across the outside, and was placed on the thick horizontal stem of a *Chrysophyllum* tree about two feet from the ground; the eggs are creamy coloured, with a faint tinge of green, very minutely speckled, and measure 15.1 × 11.6 mm.

CAMPEPHAGIDAE

According to Sclater (Shelley's *Birds of Africa*, v. 205, 1912) the earliest name available for the South African species of *Campephaga* is *C. flava* (Vieillot), but there appears to be an earlier name in *Cuculus sulphuratus* Lichtenstein (Cat. Rer. Nat. Rar. 1793), as there are good reasons for thinking that the Lichtenstein Catalogue was of part of Le Vaillant's collection. Likewise *Cuculus murinus* Lichtenstein of the same Catalogue

antedates *Graucalus caeseus* (Vieillot). *Coracina* is said to be preoccupied, so that the generic name of *Graucalus* must be used.

With regard to the genus *Campephaga*, we are beset with a problem as to whether *C. sulphurata* (Lcht.) is synonymous with *C. hartlaubi* (Salvad.), or whether two species occur side by side with the only difference between them so far detected that the latter has a yellow shoulder patch which the former lacks; no difference has been observed between the females. In the long series in the Transvaal Museum there are two types of females recognisable on the shape of the tail feathers, one of them with the tips of the outer tail feathers more rounded, the other with the tips distinctly pointed; and moreover, of the yellow-shouldered males there are eight specimens and a like number of females with the outer tail feathers pointed, while of the other species there are twenty adult males and a like number of immature males and females with the tips of the outer tail feathers not pointed; adult males of both species have the tail feathers of the blunted type. It seems possible that the shape of the tail feathers is a distinguishing character in the one sex and the yellow shoulder patch characteristic of the other sex, and further observations upon this point are desirable. Neither the colour of the shoulders in the male nor the shape of the tail feathers in the female appears to be affected by age or season, and since we find a similar difference in the colour of the males in species occurring side by side beyond our limits, it would seem that there is a generic difference between them which is not readily perceptible in the structural characters.

PYCHNONOTIDAE

Oberholser (*Smiths. coll. Quart. R.I.* pp. 149-172, 1905) has recognised twenty-two genera of Green Bulbuls, four of which occur within our limits, namely, *Andropadus*, *Phyllastrephus*, *Chlorocichla* and *Arizelocichla*. I would go further and recognise *Phyllostrophus flavostriatus* Sharpe as a genus distinct from *P. terrestris*, the bill being more arched, the tail shorter in proportion to the wing, colour greenish with yellow stripes below, arboreal instead of terrestrial habits and an entirely different call-note. I therefore propose to make *P. flavostriatus* Sharpe the type of a new genus, **AYRESILLAS**. *Andropadus debilis* W. L. Sclater has much in common with *Ayresillas*, but differs markedly in its shorter and more flattened bill, and I therefore propose to place it in a new genus, **SCLATERILLAS**.

Phyllastrephus capensis should bear the earlier name of *P. terrestris* according to Sclater (*Ibis*, 1911, p. 297). To our list should be added *P. terrestris suahelicus* Reichenow, which occurs in the Lower Zambesi Valley, *P. terrestris intermedius* Gunning and Roberts (*Ann. Transvaal Mus.* III. 115, 1911) from the neighbourhood of Delagoa Bay and *P. terrestris rhodesiae* Rbts. (*idem*, v. 258, 1917) from the Upper Zambesi Valley. In the last paper (p. 259) I have also described a new subspecies, *Andropadus importunus noomei*, which must be added to our list; reference was here made to a specimen of *A. insularis* from Beira, but more recent comparison of a specimen of *insularis* from Daressalaam indicates that the Beira specimen is referable to *A. hypoxanthus* Sharpe (*Birds of South Africa*, p. 205, 1875), which has erroneously been placed in the synonymy of *insularis*. Possibly all these specific forms will have to rank as subspecies of *A. importunus*, though the distribution of the forms is not continuous:

A. importunus from the Cape to Natal, *noomei* in the north-eastern Transvaal, *oleaginus* at Delagoa Bay, *hypoxanthus* in the Lower Zambesi region, and *insularis* on the coast of East Africa near Zanzibar and on the island itself. *Phyllastrephus milanjensis*, recorded from Chirinda by Swynnerton (*Ibis*, 1907, p. 54), should be referred to the genus *Arizelocichla*.

The genus *Pychnonotus* contains two genera, distinguished by the character of the eyelids, *Pychnonotus*, containing *capensis* and *nigricans*, having them wattled, and *Loidorusa*, containing *layardi* and *tricolor*, having them feathered. *Loidorusa tricolor ngami* (Ogilvie-Grant) (*Ibis*, 1912, p. 321) should be added to our list. It is absurd to make *P. nigricans* a subspecies of *P. capensis* as some writers have done, the two being quite distinct on the colour of the head and there being no intermediates.

TURDINAE

Chaetops pychnopygius (Strickland and Sclater) differs from the typical species of the genus, notably in its much shorter legs, and softer feathers on the crown, and may be separated under the new generic name of *ACHAETOPS*, of which it will be the monotype.

Lieut. C. G. Finch-Davies has recently secured specimens of *Aethocichla gymnogenys* Hartlaub, south of the Cunene River (cf. *Bull. S. Afr. Biol. Soc.* (1), II. 40, 1918), and the species must therefore be added to our list. According to Richmond (*Proc. U.S. Nat. Mus.* LIII. 627, 1917), *Turdoides* Cretschmarr, genotype *T. leucocephalus* Cretschm., is an earlier name for the genus commonly known as *Crateropus* Swainson, genotype *C. reinwardii*; *Cratopus* Jardine, genotype *C. bicolor*, is also earlier than *Crateropus*. Subgeneric rearrangement of *Turdoides* seems desirable.

The African Thrushes seem never to have been properly understood and generically classified. The Kurrichaine Thrush has found its right place in Sharpe's *Handlist* (v. 134, 1902), where it is placed under *Psophocichla*; but beyond this, considerable revision is necessary. *Psophocichla* has a very short tail, little more than half the length of the wing, and the coverts three-fourths of the length of the tail; the wing more "pointed" than in the other genera in South Africa, the first primary shorter than the primary coverts and the second primary the longest; the bill rather long and slender, slightly broader than high at the base; tarsi and feet stout, the outstretched feet in cabinet specimens reaching beyond the end of the tail. It inhabits open acacia country, and has the underparts of the body white, marked with elongate spots. Another genus is to be found in *Turdus guttatus* Vigors, which has the underparts of the body marked as in *Psophocichla*, but differs in that the tail is longer, the wing more rounded, the bill shorter and about as high as broad at the base; this genus I name *PSEUDOTURDUS* gen. nov., type *T. guttatus* Vigors. It inhabits forested regions in the eastern tract, and the differences which can be observed in structure and softer tone of coloration may be due to this. It is probably allied to *Psophocichla* and both of these to *Turdus viscivorus* rather than the other species so markedly different in the colour of the underparts of the body.

Richmond (*Proc. U.S. Nat. Mus.* xxxv. 610, 1909) has identified the name of *Geokichla* St. Müller, with *Turdus citrinus* Latham as the genotype. "*Turdus*" *gurneyi* and its African allies agree fairly well with this genotype, except that *citrinus* differs in the sexes, and the name of *Chamaetylas*

may be utilised for the African species. *Chamaetylas gurneyi* has the following characters: first primary much longer than the primary coverts; tarsi and feet comparatively slender; bill rather short and fairly stout, higher than broad at the base; under tail-coverts about half the length of the tail; upper wing-coverts with white spots and the inner surface of the wing showing a white pattern, as in *Psophocichla* and *Pseudoturdus*, but underparts of the body not spotted, the middle of the belly white and the throat, chest and flanks rich reddish fulvous. Its structural and colour characters exhibit the same relationship to the following genus as *Pseudoturdus* does to *Psophocichla*. *Peliocichla* Cabanis, genotype *Turdus pelios* L., represented in South Africa by *libonyanus*, differs from *Geokichla* in having the first primary shorter, about equal to the primary coverts, the cheeks and throat striped, and in lacking the white marks on the wing-coverts and the white pattern under the wing. *Turdus olivaceus* and *T. cabanisi* cannot be associated with the preceding genus, side by side with which they may occur, and may therefore be placed in a new genus under the name of AFROCICHLA, genotype *T. olivaceus* L.; this genus differs from *Peliocichla* in having no white pattern on the abdomen, the first primary longer than the primary coverts, the second primary equal to the seventh, the third and fourth equal and longest.

Turdus (= *Afrocichla*) *milanjanensis*, recorded by Swynnerton from Chirinda, has been given the name of *swynnertoni* by Bannerman (*Bull. B.O.C.* xxxi. 56, 1913).

Sharpe (*Handlist*, iv. 145, 1903) has placed all our species of *Monticola* under *Petrophila*; but this arrangement hardly meets modern requirements. The typical *Monticola* is at once separable on the shape of the wing, notably in the shortness of the outermost primary, which is only about half an inch in length, the second and third primaries longest and the tail hardly more than half the length of the wing. *Cyanocichla*, genotype *Monticola cyanus* (Linné), has the third and fourth primaries nearly equal and longest, the second about equal to the fifth. *Petrophila*, genotype *M. cinclorhyncha* Vigors, has the third, fourth and fifth primaries subequal and longest, the second about equal to the sixth. *M. rupestris* (Vieill.) has the third to the sixth primaries subequal and longest, second about equal to seventh. If *Petrophila* is to be recognised, it becomes necessary to separate *M. rupestris*, and I do so, giving it the subgeneric name of PETRORNIS, of which it will be the monotype. Further subdivision also becomes necessary, as the other southern species cannot be assigned to the preceding subgenera. *M. brevipes* Strickland and Sclater is a much smaller bird than *rupestris*, though having much the same wing formula, and may be separated under the name of COLONOCINCLA subgen. nov. and would include *M. angolensis*, which occurs within our northern limits. Finally, *M. explorator* (Vieill.) differs so completely from all the preceding in its long and slender legs and feet, that it might well be allocated to a distinct genus; but for the present I propose to give it the status of a subgenus only, under the new name of NOTIOCICHLA, of which it will be the monotype.

With regard to species of the above-mentioned genera, *Monticola pretoriae* Gunning and Roberts (*Ann. Transvaal Mus.* iii. 118, 1911) should be added to our list, as a subspecies of *brevipes*.

Sharpe, as mentioned above, admitted *Petrophila* as a genus, but over-

looked that *Saxicola monticola* and *S. pileata* are equally distinct from *Saxicola* (= *Oenanthe*) *oenanthe*. *S. monticola* is apparently the genotype of *Grillivora* Swainson (1837), as well as of *Dromolaea* Cabanis (*Mus. Hein.* 1. 9, 1850), and *S. pileata* is the genotype of *Campicola* Swainson (*Zool. Journ.* III. 171, 1827). Mathews (*Nov. Zool.* XVIII. 20, 1911) has shown that the type species of *Saxicola* is *S. rubicola*, so that the correct name for the genus as formerly accepted would be *Oenanthe*; and as the relationship of *Grillivora* and *Campicola* to *Oenanthe* is not clear, they may for the present be regarded as distinct genera. *Thamnolaea bifasciata* is far removed from *T. cinnamomeiventris* (the genotype) and is probably more closely related to *Campicola*; but as its affinity is obscure, I propose to place it in a new genus bearing the name of CAMPICOLOIDES. Before proceeding to deal with other genera, it is necessary to review the specific nomenclature of the genera *Grillivora* and *Emarginata*, which are somewhat involved. The species commonly known by the name of *Saxicola monticola* has been the subject of much enquiry in the past, and the phases of plumage of the male are not yet understood; but apart from these phases of plumage, there appear to be two subspecies, a western one with a wing length of 104–114 mm. in adult males and a larger eastern one having a wing length usually varying between 114 and 123 mm., rarely only 111 mm. The first three names to appear in the synonymy of the typical western form are:

Oenanthe monticola Vieillot (*Nouv. Dict.* XXI. 434, 1818).

Vitiflora rupicola Boie (*Isis*, 1828, p. 320).

Grillivora capensis Swainson (*Class. B.* II. 238, 1837), the first containing the specific name and the third the generic name available for the bird figured by Le Vaillant as "Le Traquet Montagnard" in his *Oiseaux d'Afrique* (Pl. 184, fig. 2, and Pl. 185, figs. 1 and 2), which was procured in Namaqualand. *Saxicola leucomelana* Burchell (*Travels in South Africa*, I. 335, 1822) was taken near the Asbestos Mountains, about where Griquatown now stands, and is a synonym of the preceding. *S. aequatorialis* Hartlaub (*Journ. f. Orn.* 1861, p. 112), described on one of Verreaux's specimens, said to have been procured in "Gaboön," but doubtless also from the south-west of the Cape Province, is also a synonym; *S. castor* Hartlaub (*Proc. Zool. Soc. Lond.* 1865, p. 747) from the Karroo is another synonym. Bocage (*Journ. Sc. Lisbon*, II. 151, 1867) procured two specimens from Dombe, Benguella, one of which he referred to *Dromolaea monticola* and the other to a new species, "*Dromolaea albipileata*," giving the wing length as 107 and 105 mm. respectively, so that they clearly belong to the western subspecies. Tristram (*Ibis*, 1869, p. 206) next described *Saxicola atmorei* from "Damaraland," the wing length being given as 112 mm., which agrees with a series from Windhoek. Five years later Blandford and Dresser (*P.Z.S.* 1874, pp. 213–241) in dealing with the chats further added to the list of names and confused the synonymy of the species by ignoring what Le Vaillant had long before pointed out, namely, that there was a great amount of individual variation amongst males. One of their names becomes available, however, for the eastern subspecies, namely *Saxicola griseiceps*, recorded from Colesberg, Natal and Transvaal, of which Colesberg may be taken as the type locality, although the wing length as given by Blandford and Dresser is rather short, only 111 mm. The other species they describe is *Saxicola diluta*, from "Damaraland," with a wing measurement

of 104 mm., and is a synonym of *monticola*; Sharpe (*Birds of South Africa*, p. 243, 1876) states that the type is from "Hykomkaap and Oosop on the Swakop River." Sharpe, in the work just mentioned (p. 249), described yet another supposed species as *Saxicola anderssoni*, from Colesberg, Swakop River and Koysfontein (Great Namaqualand), the wing length being given as 116 mm.; Colesberg being the first locality cited may be taken as the type locality, the name thus being reduced to the synonymy of the eastern subspecies. Finally, Gurney (*Ibis*, 1877, p. 343) described *S. tephronota* from Potchefstroom, giving a wing measurement of 116 mm. We arrive, therefore, at the conclusion that, apart from colour characters which are not yet understood, there are two subspecies with the following synonyms:

Grillivora monticola monticola (Vieillot): Namaqualand.

Saxicola leucomelana Burchell: Griquatown.

Vitiiflora rupicola Boie: Namaqualand.

Grillivora capensis Swainson: Namaqualand.

Saxicola aequatorialis Hartlaub: "Gaboon"?

S. castor Hartlaub: Karroo.

Dromolaea albipileata Bocage: Dombe, Benguella.

Saxicolâ atmorei Tristram: "Damaraland" (Windhoek).

S. diluta Blanf. and Dress. Swakop River.

Grillivora monticola griseiceps (Blanford and Dresser): Colesberg.

Saxicola anderssoni Sharpe: Colesberg.

S. tephronota Gurney: Potchefstroom.

Amongst the other species of South African chats is a large grey one, which could easily be mistaken for the grey phase of the Mountain Chat, side by side with which it ranges on the west; this similarity led Hartlaub to name them respectively *Saxicola castor* and *S. pollux*, the latter of which is distinguishable by the emargination of the second primary, on which account it is commonly referred to the genus *Emarginata*; but it differs sufficiently from both *Grillivora* and *Emarginata* to be placed in a separate genus, for which I propose the name of *KARRUCINCLA* gen. nov., type *Saxicola pollux* Hartlaub. Males have the second primary distinctly, but females less distinctly, emarginate, and it seems probable that there are several subspecies which remain to be named. In the Transvaal Museum collection are the following specimens, with the dimensions recorded opposite:

		Wing	Tail	Tarsus	Culmen
2 ♂♂	Klaver	101, 104	72, 77	33	16, 17
1 ♀	"	94	69	31	15.5
2 ♂♂	Phillipstown	98	72	31	15.5
2 ♂♂	Carnarvon	110, 111	81, 82	31, 33	17
1 ♀	"	105	77	32	15.5
1 ? (♂)	Bloemfontein	111	82	32	?

Saxicola schlegeli Wahlberg I have not seen; but there is a good description of the species in the *Journ. f. Orn.* 1857, p. 3, probably of a female, the dimensions being small and no mention being made of an emargination on the second primary. Reichenow includes the species in *Emarginata*, and Seebohm figures the wing of "*Myrmecocichla cinerea*" (*Cat. B. Brit. Mus.* v. 358, 1881) clearly showing an emargination. I cannot agree with previous writers as to what Le Vaillant intended when he described the

"Tractrac" (*Ois. d'Afriq.* Pl. 184 and text), on which Vieillot based the name of *Oenanthe cinerea* which is illegally used by modern writers. Sharpe could not have critically examined Le Vaillant's work, either when he described *Saxicola layardi* (*Birds of South Africa*, p. 236, 1877) or nearly thirty years later (*Ibis*, 1904, p. 325), or he would have perceived that Vieillot's *cinerea* and his own *layardi* were synonyms. In 1904, Sharpe gave a synopsis of the species *pollux*, *cinerea* and *schlegeli*, stating that the first had a grey, the second and third a white rump, *cinerea* differing from *schlegeli* by its larger size. Le Vaillant compared his "Tractrac" with the Familiar Chat (*Phoenicurus familiaris*) and both the plate and description agree quite well with the characters of Sharpe's *Saxicola layardi*; and, moreover, C. H. B. Grant (*Ibis*, 1911, p. 413) and other naturalists have noted how very similar are the two species, so that Le Vaillant's comparison was a natural one. The type locality for the "Tractrac" is Outeniqua and it would seem to occur thence northwards to the Orange River, overlapping the range of *Emarginata sinuata* and *Phoenicurus familiaris*, so that it is to be regarded as a firmly established species, and as such a genus, for which I propose the name of PHOENICUROIDES. I have not yet seen a specimen from Damaraland or Great Namaqualand which could be referred to either *schlegeli* or what authors have recently regarded as *cinerea*; but if the difference in size mentioned by Sharpe is not a matter of sex, the Great Namaqualand bird will have to be named. No doubt these two species are referable to *Karrucincla*.

With regard to the name of *Oenanthe cinerea* Vieillot, recent authors have ignored the fact that the name was first used by Vieillot (in the same publication) for *O. oenanthe* (L.), and that it was consequently invalidated. Mathews and Iredale (*Austral. Av. Rec.* IV. 144, 1921) have recently pointed out that there is an earlier name for the "Tractrac" in *Motacilla tractrac* Wilkes (1817), which therefore becomes available for the genotype of *Phoenicupides*. We have thus three species which I here place in as many genera, the first *Phoenicurus familiaris*, which is widely dispersed and perhaps the ancestral form, with the second primary without a sign of emargination, the second *Phoenicuroides tractrac* with a local distribution in the south-west, having the second primary slightly emarginate, and *Emarginata sinuata* with a rather wider distribution in South Africa, extending to Waterberg, Transvaal, and having the second primary very deeply emarginate. The larger species with the second primary emarginate, *Karrucincla pollux*, appears to me to have had a different origin and to be more akin to *Grillivora*.

Yet another chat requires generic separation, namely *Saxicola albicans* Wahlberg, which is characterised by its much stouter bill, legs and feet as compared with *Phoenicurus familiaris*, which occurs side by side with it; it differs from *Emarginata*, *Phoenicuroides* and *Karrucincla* in showing no sign of emargination on the second primary and it differs also from *Grillivora* in coloration, shape of wing and smaller size. I, therefore, allocate it in a new genus under the name of PSAMMOCINCLA.

Saxicola arnotti and its allies are more nearly related to *Myrmecocichla* than *Thamnolaea*, with which it is sometimes associated; but it differs from *Myrmecocichla* in its more rounded wing and absence of white on the under surface of the primaries. It is a forest bird and differs accordingly from

Myrmecocichla which inhabits wide stretches of open country. I propose to place it, therefore, in a new genus bearing the name of SCIOCINCLA, genotype *Saxicola arnotti* Tristram. Ogilvie-Grant (*Ibis*, 1908, p. 299) has shown that *Sciocincla arnotti* differs from *nigra* in having the crown white in the male and the throat white in the female, instead of being entirely black in both sexes, and in having the upper wing-coverts white tipped with black, instead of pure white; he places as synonyms of *arnotti* the forms about which Reichenow was in doubt, *shelley*, *leucolaema* and *collaris*; but more recently Hartert (*Bull. Brit. Orn. Cl.* xxxvii. 42, 1917) has revived the name of *leucolaema* for the East African birds which he regards as a subspecies of *arnotti*, differing in size only and not occurring within our limits. Hartert gives the range of *Sciocincla arnotti* as extending as far south as Griqualand East; but this must surely be an error, as it does not occur south of the Lydenburg, Transvaal, low country.

The Melsetter Robin, described by Shelley (*Bull. Brit. Orn. Cl.* xvi. 125, 1906) under the name of *Erythracus* (= *Erithacus*) *swynnertonii*, differs in several important respects from all the northern species commonly associated in the genus, some of which have already received generic names, and it may therefore be placed in a new subgenus bearing the name of SWYNNERTONIA, in honour of Mr C. F. M. Swynnerton, who is not only responsible for the discovery of the species but has also contributed very largely to our knowledge of our tropical species of birds. The wing formula of the genus is: second primary much shorter than the secondaries and the tenth primary, the third a little shorter than the seventh and the fourth, fifth and sixth primaries subequal; the bill is black and the legs and feet are pinkish; three conspicuous bristles are present in the specimen examined and the tail is relatively short as compared with other species.

The other Robins of Africa are in need of careful revision, and although the eggs of some species are variable, even the variability is limited to colour or shade of colour, and this character will probably prove useful in studying the phylogeny of the species. In *Cossypha*, for example, the two yellow species, *bicolor* and *natalensis*, which have pale legs, have uniform eggs varying from greenish or olive to dark brown, whereas *C. caffra* and *Tarsiger stellatus* have finely spotted eggs that are hardly distinguishable, though their nests are distinct. There appears to be no description extant of the eggs of *C. humeralis*, but the species is so entirely different that we may safely allocate it in a distinct genus, for which the name of *Bessonornis* A. Smith is available. According to Mathews and Iredale (*Austral. Av. Rec.* iii. 43, 1915) the name of *Cossypha* should be replaced by *Bessonornis*, as it is preoccupied by *Cossyphus*, a procedure which it may not be necessary to follow; and according to the same authors the name of *bicolor* Sparrmann (1790) must give place to *dichroa* Gmelin (1789). I propose to change the name of *Cossypha* to CAFFRORNIS for the typical species with dark legs and feet; and consider it advisable to separate *Cossypha dichroa* and *C. natalensis*, applying the generic name of HYLOAEDON to the former and placing the latter tentatively in the same genus. The species having dark legs and feet and a white eyebrow occupy different classes of country, *C. caffra* occurring in the south and west, and in the north at higher levels only, *C. heuglini* occurring in the tropical country only; and in the same way *Hyloaedon dichroa* occurs only in the south of the Tropic of Capricorn,

H. natalensis occurring only on the eastern low country belt south of the Tropic, but having an extensive range northwards beyond our limits. The specific differences have a subgeneric value, but for the present I am disregarding them.

In the genus *Erythropygia* as generally constituted there are two very distinct groups, the individual species of which have often subgeneric value; but for the present we need recognise only the two genera, *Erythropygia*, type *E. paena*, together with *E. zambesiana*, *E. munda* and *E. leucophrys*, and *Tychaedon* (= *Aedonopsis* Sharpe, cf. Richmond, *Proc. U.S. Nat. Mus.* LIII. 575, 1917), type *T. signata* (Sundevall), together with *T. coryphaea* (Lesson) and *T. quadrivirgata* (Reichenow). In the first genus *E. paena* occupies the dry west, *E. quadrivirgata* the moist north-east, *E. munda* the north-west (Upper Zambesi Valley across to south-eastern Rhodesia) and *E. leucophrys* the dry thickets of the south and east. Likewise, *Tychaedon quadrivirgata* occupies the tropical north-east, *T. signata* the south-east and *T. coryphaea* the karrooide scrub of the south.

With regard to alterations and additions in the preceding genera, the following have been noted:

Aedon + *Erithacus philomela* = *Luscinia luscinia* (cf. *List of Brit. B.*, Brit. Orn. Un. 1915, p. 367).

Tarsiger stellatus = *Pogonocichla stellata* (cf. Sharpe, *Handlist*, III. 239, 1901).
Pogonocichla stellata transvaalensis (Rbts. *Journ. S. Afr. Orn. Un.* VIII. 21, 1912).

P. stellata chirindensis (Rbts. *Ann. Transvaal Mus.* IV. 75, 1914).

Caffronis caffra namaquensis (W. L. Sclater, *Ibis*, 1911, p. 415).

Cossypha haagneri Gunning (*Ann. Transvaal Mus.* I. 174, 1909) = *Hyloaedon dichroa* (Gmelin) (cf. *idem*, IV. 172, 1914, et Mathews et Iredale, *l.c.*).

Erythropygia paena damarensis Hartert (*Bull. Brit. Orn. Cl.* XIX. 96).

Pratincola = *Saxicola torquata orientalis* (W. L. Sclater, *Ibis*, 1911, p. 409).

In the *Sylviidae* there is need for very considerable revision, the way in which species are allocated in genera and the arrangement of the genera themselves being often far from natural. The species are frequently so much alike in colour characters that they are extremely difficult to differentiate; yet, if due regard is paid to the external structural characters, much of this difficulty is obviated, especially when colour markings are taken into account as well. Nest and egg characters take a very important place in the arrangement of the genera and more subfamilies would save much confusion. The Reed Warblers, with their open cup-shaped nests, could form one group, with the Sedge Warblers forming another, the Sylvia Warblers, which build open cup-shaped nests in trees, would form another group, with the Phylloscopine Warblers forming a connectant group between them and the Grass Warblers. In each of these there are northern and southern genera, the former often migrating southwards, and in this way overlapping the latter; while the latter are most frequently residents and with more species to the genera than the migrants, as might be expected. In the Reed Warblers, Oberholser (*Proc. U.S. Nat. Mus.* XXVIII. 898-900, 1905) has rearranged the genera, placing our *Acrocephalus baeticatus* in a new genus *Notiocyhla*, and *A. schoenobaenus* and *A. palustris* in *Muscipeta*; but even this arrangement does not quite suit the case, *Notiocyhla baeticata* being obviously a resident representative of "*Muscipeta*" *palu-*

stris, in the same way as *Calamocichla* is an African representative of the migratory *Acrocephalus arundinaceus*. It is consequently necessary to give a new generic name to *A. palustris* (Bechstein) and I therefore propose to call it PALAEOLAIS. *Muscipeta*, typified by *M. schoenobaenus* (Linné) has the same wing formula as *Palaeolais*, but the latter differs in its more uniform and paler coloration of the upper parts generally, the tail proportionately longer, the bill broader basally, the culmen more arched, the maxilla lighter brown and the mandible entirely yellowish white. *Muscipeta* with the upper parts more striped does not appear to have a direct representative resident in Africa, unless the genus *Bradypterus* is to be regarded as such, although differing considerably in structure.

In the genus *Calamocichla*, *C. cumenensis* Neumann (*Nov. Zool.* xv. 250, 1908) is apparently allied to *C. gracilirostris* (Hartlaub) and *C. zuluensis* Neumann (*Bull. Brit. Orn. Cl.* xi. 96, 1908) is evidently a southern representative of *C. leptorhyncha* (Reichenow) which occurs within our limits on the Zambesi.

The genus *Bradypterus* should contain only the marsh-haunting species, the scrub-haunting species *Bradypterus barratti* Sharpe being referred to a distinct genus, for which I propose the name of CAFFRILLAS, characterised by its more rounded wing and more graduated tail as compared with *Bradypterus*; the call-notes of the two genera are entirely different, that of *Caffrillas* being indistinguishable from the call-note of *Cryptillas*.

With regard to species, *Bradypterus bedfordi* Ogilvie-Grant (*Ibis*, 1912, p. 382) from Lake Ngami, *B. transvaalensis* (Rbts. *Ann. Transvaal Mus.* vi. 116, 1919) from Wakkerstroom must be added to our list. In the same place as the last, I have shown that *B. babaeculus* (Vieillot) is distinct from *B. brachypterus*, as to which there was previously some doubt, Reichenow even going so far as to place *Caffrillas barratti* Sharpe in the synonymy of *B. babaeculus*. In *Caffrillas*, Haagner has described *C. pondoensis* from Port St Johns (*Journ. S. Afr. Orn. Un.* v. 90, 1909), a valid species allied to *C. sylvaticus* (Sundevall). Another species exists farther inland which I propose to describe as

Caffrillas barratti godfreyi subsp. nov.

Allied to *C. barratti* (Sharpe), but differing therefrom in having the throat stripes less clearly marked and confined to the lower part and therefore fewer in number, and the upper parts less rufescent and lighter coloured. The tail is of the same length as the wing, as in *C. sylvaticus*, from which it differs, however, in having the lower throat striped and the upper throat without dark tips and in being rather larger in size. An intermediate form, as regards the throat marks, is found in the Drakensberg scrub, which may be described as follows:

Caffrillas barratti major subsp. nov.

Differing from the preceding subspecies and the typical *C. barratti* from Lydenburg District in having the tail consistently longer, the upper parts decidedly lighter coloured, with very little rufescent colouring, greyish olive instead of dark olive, the sides of the neck even greyer than the back and the throat stripes not so conspicuous though as plentiful as in *C. barratti*. The following table of dimensions will serve to show the differences in size:

		Wing	Tail	Tarsus	Culmen
<i>C. sylvaticus</i>	♂	61	61	19	12·2
"	♀	57	56	18	13
<i>C. pondoensis</i>	♂	60	58	18	13
"	♀	57	57·5	18	—
<i>C. godfreyi</i>	♀	62	61	21	12
"	Imm.	62	62	20·5	11
"	Imm.	62	62	20	12
<i>C. major</i>	♂	69	74	23	13·2
"	♀	69	76	21	13·3
"	♂	68·5	76	21	13
"	♀	65·5	77	21	13
"	♂	63	69	20·5	13
<i>C. barratti</i>	♂	62	68	22	13

The type of *C. godfreyi* is from Pirie, taken by the Rev. R. Godfrey and presented by him to the Albany Museum, Grahamstown, in which institution the specimen is preserved. The two immature specimens are yellowish in place of white and were taken by the Rev. Godfrey at Tsolo and presented to the Transvaal Museum. The series of *C. major* are from Wakkerstroom, taken by me, and as the type I select, T. M. No. 6869, 18 October, 1910, a male in breeding plumage. Besides these specimens, there is in the Transvaal Museum collection a specimen which I take to be *C. godfreyi*, from Grahamstown, which differs from the type in having the underparts whiter, so that it is possible the two which are recorded as being immature represent another form found farther east at Tsolo, and the Grahamstown specimen a paler form found in the south, *C. pondoensis* being a coastal species representing *C. sylvaticus* of the coastal forests of the Knysna belt. We have also a specimen from Giants Castle of *C. major* and a specimen of *C. barratti* from Woodbush.

Schoenicola apicalis = *Catrisicus apicalis*.

According to Mathews and Iredale (*Austral. Av. Rec.* III. 122, 1917 and IV. 131, 1920) the Icterine Warbler should bear the name of *Hippolais coelebs* (Frentzel, 1801). *Iduna olivetorum* has been recorded from the Transvaal and Rhodesia, first as *Sylvia nisoria* in error, and subsequently as *Hippolais olivetorum* (cf. *Ann. Transvaal Mus.* III. 109, 1911; *Journ. S. Afr. Orn. Un.* VIII. 17 and 62, and *Ibis*, 1915, p. 568). The genus *Sylvia* should be reconstructed, but only two species occurring within our limits, it is here only necessary to separate *Sylvia simplex* (= *borin* Boddaert), genotype of *Epilais*, which differs from *Sylvia sylvia* in the length of the wing and tail, in the colour of the bill, legs and feet, and in the shape of the tail feathers.

The genus *Eremomela* as at present constituted does not form a natural genus. *Eremomela albigularis* Hartlaub is so entirely different from the other members of the pseudogenus that I propose to place it in a new genus, EREMOMELOIDES, differing from *Eremomela*, *Chlorodyta*, *Apalis*, *Camaropectera* and *Dryodromas* (to which it has at times been referred) in having a shorter and blunter bill, and the third primary the longest; the tail feathers are very broad and in length, in proportion to the wing, intermediate between *Camaropectera* and *Apalis*; the feet are as in *Eremomela*. Two more genera may be separated. *Tricholais*, genotype *T. elegans*

Heuglin, which would include our species *E. scotops*, with two conspicuous rictal bristles, the typical *Eremomela* having none; in *Tricholais* the tail is also long, the outstretched toes not reaching to the tip and the bill is black. In *Eremomela usticollis* Sundevall two conspicuous rictal bristles are present, but the tail is short, the outstretched toes reaching beyond the tip, and the bill is brown. Having regard to these differences and the fact that these three species are found side by side, I think it is advisable to give the last one a new generic name, MAGALILAIS, genotype *E. usticollis* Sundevall. *Baeoscelis* Heine, genotype *B. badiceps*, appears to me to be a synonym of *Eremomela*. *E. baumgarti* Reichenow, from Damaraland, is a synonym of *Magalilais usticollis*. *E. flaviventris saturatior* Og.-Grant (*Bull. Brit. Orn. Cl.* xxv. 120, 1910) from the Karroo districts is a very distinct subspecies, if not indeed a species, and must be added to our list.

Reichenow has lumped together under *Apalis* a number of genera which have no close relationship. Stark and Sclater have also placed *Stenostira scita* in this genus, an error which is not easily explained having regard to the wide difference between the genera; it is correctly placed under the *Muscicapidae* by Reichenow. The characters given by Sharpe (*Cat. B. Brit. Mus.* vii. 136, 1883) are sufficient to distinguish *Euprinodes* from *Apalis*; but *Chlorodyta*, genotype *C. flavida*, appears to me also to be separable, *Euprinodes* having the tips of the tail feathers and the whole of the outer pair white as in *Apalis*, *Chlorodyta* having them yellowish. "*Spiloptila*" *ocularia* (A. Smith) cannot be assigned to either *Apalis* or *Spiloptila*, and I propose therefore to place it in a new genus, PRINIOPS, differing from *Spiloptila* in colour of plumage, bill, legs and feet, proportionately longer tail and tarsus and larger size; it differs from all South African warblers in its very long and narrow tail feathers. With regard to species of the preceding genera, the following have been recorded or described from within our limits:

Apalis claudei W. L. Sclater (*Bull. B.O.C.* xxviii. 15, 1911).

A. ruddi W. L. Sclater (*idem*).

A. chirindensis Shelley (*Bull. B.O.C.* xvi. 126, 1906).

A. rhodesiae Gunning and Roberts (*Ann. Transvaal Mus.* iii. 115, 1911).

A. thoracica venusta G. and R. (*idem*, p. 116).

A. thoracica darglensis G. and R. (*idem*, p. 117).

A. thoracica spelonkensis G. and R. (*idem*, p. 116).

A. thoracica flaviventris G. and R. (*idem*, p. 117).

A. thoracica griseiceps Rchw. (cf. Chubb, *Ann. Durban Mus.* i. 80, 1914).

Apalis ruddi W. L. Sclater, above mentioned, may have to be removed to another genus. Three species of *Chlorodyta* occur within our limits, *C. flavida* in the north-west, *C. neglecta* in the north-east and *C. florisuga* in the south-east.

Camaroptera brevicauda = *C. griseoviridis*.

C. griseoviridis noomei Gunning and Roberts (*Ann. Transvaal Mus.* iii. 117, 1911) = *C. griseoviridis sundevalli* Sharpe (cf. Noomé, *Journ. S. Afr. Orn. Un.* viii. 18, 1912).

Sylvietta flecki Reichenow does not appear to be more than a doubtful subspecies of *S. rufescens*. *S. rufescens ochrocarra* Oberholser (*Smiths. Misc. Coll.* xlvii. 1555, 1907) is said by Sclater and Mackworth-Praed (*Ibis*, 1918, pp. 666-672) to be a synonym of *S. rufescens rufescens*; at the

same place these authors also reject the name of *S. flecki* Rchw., but describe as another subspecies *S. rufescens transvaalensis* from Rustenburg District, which is no more valid than the one they reject, as is abundantly proven by the long series in the Transvaal Museum collection. Members of the genus are subject to a wide range of variation in shade of colour in the same localities and the length of the bill varies also considerably, males as a rule having longer bills than females. *S. whytei* (Shelley) has been recorded from Eastern Rhodesia by Swynnerton (*Ibis*, 1907, p. 56). *S. pallida* Alexander is intermediate between *S. rufescens flecki* and *S. whytei*, and no doubt will prove to be only a subspecies.

Calamonastes stierlingi Rchw. occurs in the Matoppos, as is shown by a specimen from there in the Transvaal Museum collection, but the specimens from Transvaal recorded by Gunning and Haagner in their *Check List* (1910) and identified by Reichenow as *C. stierlingi*, are referable to the typical *C. fasciolatus*.

Heliolais erythroptera (Jardine) was recorded by Claude Grant from Gorongosa (*Bull. Brit. Orn. Cl.* xxii. 93, 1908); but Sclater (*Ibis*, 1911, p. 315) has referred the specimens to *H. kirbyi* Haagner (*Ann. Transvaal Mus.* i. 233, 1909) described from Boror.

As with other birds which are superficially alike, the large number of species contained in the genus *Cisticola*, as at present constituted, is an illustration of inconsistent classification; because they look alike they are lumped together, without regard to structural differences and distribution. I have taken as many as nine species within a radius of a mile, and as the species in such cases are each representative of groups of greater or lesser geographical distribution, it is obvious that there is a deep-seated difference between all of them which should find its expression in generic, or at least subgeneric, classification. Some years ago I separated the species into groups, trusting that these would receive greater attention than had previously been the case; but it seems hopeless to expect the systematists of Europe to absorb views having their origin abroad and the time has arrived when it becomes necessary to act without consulting them, and I therefore make the following arrangement as being the nearest it is possible to arrive at as to their natural position in genera: the typical *Cisticola cisticola* of southern Europe has its representatives as far east as Australia and southwards to South Africa. *Hemipteryx* appears to me to be closely allied to it, like many more species having been either isolated in the southern region beyond the Karroo belt or so influenced by the conditions prevailing there that it has become quite distinct; as with most of these southerly evolved species, others have evolved from it again after it has radiated northwards to the Drakensberg, so that representatives of the two species (which are now subgroups) occur commonly side by side. These two subgroups are commonly regarded as genera, although to be more precise they can be regarded as subgenera only, *Hemipteryx* being characterised by its shorter tail, shorter outermost primary and generally larger size. Both genera build a purse-shaped nest with the entrance facing skywards, and in this respect they differ from the rest of the members wrongly allocated in the genus *Cisticola*. These species of the true *Cisticola* and *Hemipteryx* frequent open, grass-covered plains, or plains with a few trees and bushes scattered amongst the grass, and side by side

with them we find two other genera, very similar in colour characters but differing structurally in the shape of the wing and tail. The first of these I propose to name NEPHELICOLA gen. nov., type *Hemipteryx minuta* Gunning, characterised by having a very short tail and outermost primary, the feet rather small as compared with *Hemipteryx*. Of this genus there are two subgenera comprising large and small species respectively, but for the present these need not be named. The second genus I propose to name TACHYDYTA gen. nov., type *Cisticola lavendulae kalahariae* Og.-Grant, which has also a very small outermost primary, but the primary and tail feathers narrower, the latter longer than in the preceding, and the legs and feet are very slender. In all the preceding genera the bill is small and sharply pointed, the remaining genera having a blunter bill, and of these, two genera have the outermost primary approximately half the length of the second. The first of these is characterised by its short, broad tail feathers, which have a broad black subterminal bar; I propose to place this in a new genus bearing the name of NEOCISTICOLA, type *C. pusilla* Gunning and Roberts, allied to *C. rufa* (Fraser). The second genus is *Dryodromas* Finsch and Hartlaub, type *C. fulvicapilla* (Vieillot), characterised by having narrower and uniformly coloured tail feathers, sometimes with a trace of a subterminal black bar. *Neocisticola* is a tropical genus and frequents large open patches covered by long grass, in the forest country as a rule, while *Dryodromas* frequents bushes and small trees and the grass surrounding them, never large open stretches of grass alone. Of the remaining genera, the majority have the outermost primary much more than half the length of the second, the tail seldom much shorter than the wing, usually about equal to it or longer. I would place them all as subgenera of one genus, *Dryodyta* Sundevall, type *D. tinniens* (Vieillot). This type species is confined to South Africa proper, from the extreme south over the temperate part as far north as Zoutpansberg, beyond which its ally is difficult to be sure about, unless the larger species, *D. lugubris*, takes its place, both species having the back and tail feathers striped with black; but the latter differs in its larger size, proportions of the toes and in having the outermost primary longer, and I propose therefore to place it in a new subgenus under the name of DRYODYTOPS, type *Cisticola lugubris* (Rüppell). The most aberrant subgenus is *C. natalensis* (A. Smith), which has a short, very stout (almost finch-like) bill, in size larger than all the others, the tarsus in particular being long and stout, seldom measuring less than 24 mm. in length; this species I propose to make the type of a new subgenus, PSEUDHEMPTERYX, from its general resemblance to *Hemipteryx* in habits and colour, although its great size and short, blunt bill are otherwise distinguishing characters which are very conspicuous. Of the remaining four subgenera, the most easily distinguished is in *Cisticola aberrans*, remarkable for its uniform and very long tail and the most rounded wing of all the subgenera, the outermost primary being well over two-thirds of the length of the second; I propose to place this in a new subgenus, RHATHYMODYTA, type *C. aberrans* (A. Smith). The remaining three subgenera all have the tail with a subterminal black bar, the outermost primary not more than two-thirds of the length of the second. Of these *C. erythrops* (Hartlaub) has the back uniform, not striped, and I propose to place it in a new subgenus, THRENETES. The remaining two subgenera

look very much alike, but differ in size, call-notes and the proportionate length of the toes and claws; the first, I propose to place in a new sub-genus, THRENODYTA, type *C. subruficapilla* (A. Smith), characterised by its smaller size and long toes and claws, and the second under THRENODYTOPS, type *C. chiniana* (A. Smith), characterised by its larger size and short toes and claws. The following "key" will facilitate the identification of the genera and subgenera:

1. Largest species, with a short and massive bill; tarsus over 24 mm. in length: *Pseudhemipteryx*.
Smaller species, tarsus under 24 mm. in length: 2.
2. Outermost primary half or less than half the length of the second; size always small and tail never longer than the wing: 3.
Outermost primary decidedly more than half the length of the second; size usually (not always) larger and tail often more than length of wing: 8.
3. Bill sharply pointed; outermost primary decidedly less than half the length of the second: 4.
Bill not so finely pointed; outermost primary about half the length of the second: 7.
4. Tail over 60 per cent. length of the wing: 5.
Tail under 60 per cent. length of wing: 6.
5. Outermost primary very small, under 40 per cent. length of second; wing and tail feathers narrow: *Tachydyta*.
Outermost primary longer, over 40 per cent. length of second: *Cisticola*.
6. Outermost primary 30-40 per cent. length of second: *Hemipteryx*.
Outermost primary under 30 per cent. length of second: *Nephelicola*.
7. Tail feathers very broad, with a large black subterminal black bar: *Neocisticola*.
Tail feathers narrower, without a distinct subterminal black bar: *Dryodromas*.
8. Tail without a subterminal black bar; outermost primary over 65 per cent. length of second: *Rhathymodyta*.
Tail with black subterminal bar; outermost primary not more than 65 per cent. length of second: 9.
9. Back mainly black in colour, broadly striped: 10.
Back not black, more or less striped with brown, but not heavily: 11.
Back not striped: *Threnetes*.
10. Size smaller; inner toe longer than outer; outermost primary about 55 per cent. length of second: *Drymodyta*.
Size larger; inner toe about equal to outer; outermost primary about 60 per cent. length of second: *Drymodytops*.
11. Toes and claws short: *Threnodytops*.
Toes and claws long: *Threnodyta*.

The genera and species may be arranged as follows:

Hemipteryx tatrix (Vieillot). Southern area.

H. egregia Rbts. (*Ann. Transvaal Mus.* III. 262, 1913). Drakensberg.

Cisticola terrestris (A. Smith). This is "*Cisticola cursitans*" or "*C. cisticola uropygialis*" of authors. The latter name (Fraser's) is untenable if the West African bird should prove to be identical with the South African, being a year later than Smith's *terrestris*. Precisely what *Cisticola terrestris* of authors may be is not clear, and I suspect several species have been confounded under the same name. The species seems to be widely distributed in South Africa and only one form has so far been recognised from within our limits.

- Nephelicola major* Rbts. (*l.c.* p. 263). Albany District?
- N. mystica* Rbts. (*Journ. S. Afr. Orn. Un.* x. 106, 1914). Pretoria.
- N. immaculata* (Hartl.). Cradock.
- N. ayresi* (Hartl.). Natal.
- N. minuta* Gunning (*Ann. Transvaal Mus.* i. 174, 1909). Woodbush.
(*N. ayresi* and *N. minuta* may prove to be synonymous with *N. immaculata*.)
- Tachydyta kalahariae* (Og.-Grant) (*Bull. Brit. Orn. Cl.* xxv. 121, 1910). In literature referred to also as *Cisticola lavendulae*, which was described from Socotra Island. Dry, open, grass-veld country, or open patches of veld in the "bush-veld."
- Neocisticola pusilla* (Gunning and Roberts, *Ann. Transvaal Mus.* III. 118, 1911). This has been recorded as *Cisticola rufa* by W. L. Sclater (*Ibis*, 1912, p. 227) from Lower Zambesi; but according to Sclater and Mackworth-Praed (*Ibis*, 1918, p. 656) "*C. rufa* is found in West Africa from the Welle River to the Cameroons, and perhaps Angola, is a reddish bird as the name implies, and appears to be always without striping on the back." On the previous page they refer records from other parts of Africa to *Cisticola brachyptera* Sharpe and state that "winter birds show distinct but not very heavy stripes on the back, the summer birds are quite plain." We have a specimen from Nyasaland, presented by C. F. Belcher, Esq., which agrees fairly well with *C. brachyptera*, but the two specimens from Lower Zambesi, upon which *C. pusilla* was based, are decidedly redder, while the tail feathers are broader and the outermost primary is longer, so that I cannot see that the Nyasaland and the coastal specimens are referable to the same species, though belonging no doubt to the same genus. The Nyasaland specimen was taken in January, the Boror specimen in May and the Beira specimen in September, and all are unstriped above.
- Dryodyta (Drymodyta) tinniensi* (Licht.). Cape to Zoutpansberg.
- D. (Drymodytops) lugubris* (Rüpp.). Tropical low country.
- D. (Threnodyta) subruficapilla* (A. Smith). Southern Cape Districts.
- D. (Threnodyta) lais* (Hartlaub). Kaffraria and Drakensberg.
- D. (Threnodyta) monticola* Rbts. (*Ann. Transvaal Mus.* iv. 242, 1913). Central Transvaal.
- D. (Threnodyta) rufilata* (Hartl.). Dry western kopjes.
- D. (Threnodytops) chiniana* (A. Smith). Bushveld.
- D. (Pseudhemipteryx) natalensis* (A. Smith). Tropical Africa. *C. strangei* (Fras.) is a synonym.
- D. (Threnetes) erythroops* (Hartl.). Streams and marshes in tropical low country.
- D. (Threnetes) semitorques* (Heugl.). Eastern mountainous country within the Tropics. *C. cinerascens* Heuglin is a synonym of this species, a conclusion formed by both Heuglin and Reichenow and with which I agree after consulting the original descriptions and other literature.
- D. (Rhathymodyta) aberrans aberrans* (A. Smith). Subtropical area from Natal to Transvaal. *C. pretoriae* (Haagner, *Ann. Transvaal Mus.* i. 230, 1909) is based upon a soot-stained example from the neighbourhood of the city, others from the neighbourhood and farther north not differing from typical specimens from the coast of Natal.
- D. (Rhathymodyta) aberrans minor* Rbts. (*Ann. Transvaal Mus.* III. 237, 1913). Pondoland and Kaffraria.
- Dryodromas fulvicapilla fulvicapilla* (Vieillot). Kaffraria to Barberton.
- D. fulvicapilla silberbaueri* Rbts. (*Ann. Transvaal Mus.* vi. 117, 1919). Groot Drakenstein Mts.
- D. ruficapilla* (A. Smith). Orange River and bushveld generally. Owing to authors having confused this species with *C. aberrans*, it has received

several new names, which may however prove to be available for subspecies, namely, *Cisticola muelleri* Alexander (*Ibis*, 1899, p. 446) from Tette on the Zambesi and *Cisticola cinnamomeiceps* Haagner (*Ann. Transvaal Mus.* 1. 197, 1909) from Beira.

PRINIIDAE

I propose to place in the rank of a family the genus *Prinia*, which differs from flycatchers and warblers in having only ten tail feathers, in building a very distinct type of nest and in having eggs which are usually quite readily identified. For the present I do not propose to differentiate the genera or subgenera into which the groups might be allocated, as the family extends to Asia and I have insufficient material for comparison; but I may mention, for the information of other workers, that there is a decided overlapping in the distribution of southern species. Thus, the most widely dispersed is *Prinia mistacea*, which occurs side by side with the bar-throated species in Transvaal and the stripe-throated species of the east and south. Precisely in the same way, *Burnesia substriata* (A. Smith) overlaps the range of *Prinia maculosa* (Boddaert) in the southwest. I do not think that there can be any doubt that *B. substriata* is not correctly allocated in *Prinia*, though whether it is correctly allocated in *Burnesia* or not remains to be proved, and I therefore follow Sharpe in this respect. It has doubtless radiated southwards by way of the west, the next species in the genus occurring in the Congo region.

Sclater and Mackworth-Præd (*Ibis*, 1918, pp. 676-677) have given us some interesting observations in reference to the subspecies of *P. mistacea*, which they allocate as follows:

- Prinia mistacea mistacea*: N.E. Africa across to Nigeria and Gold Coast hinterland; with a seasonal plumage, wing 46-52, tail in summer 50, in winter 60-62 mm.
- P. mistacea melanorhyncha*: W. African coastlands, Portuguese Guinea to S. Nigeria; no seasonal change, wing 45-51.
- P. mistacea tenella*: E. Africa and Uganda to Belgian Congo; no seasonal change, wing 48-55.
- P. mistacea affinis*: S. Africa, from N. Rhodesia and N. Angola southwards; with a seasonal change and wing 48-55.

Upon comparing the long series in the Transvaal Museum collection, I find that an adult specimen from Boror agrees very well with the original description of *P. m. tenella* (Cabanis); while six from Beira can hardly be distinguished from the Boror specimen, so that this subspecies would appear to extend to well within our limits on the east coast. These specimens are very reddish on the outer margins of the primaries, secondaries and secondary coverts, the tail reddish, the upper back tinged with tawny, which increases on the rump and upper tail coverts. Specimens from the central, northern and eastern Transvaal and a single specimen from Weenen are not so reddish on the wings, tail and upper parts and are larger on the average; winter-plumaged specimens from Transvaal agree very well with Smith's description and figure (*Illustrations Zool. S. Afr.* Pl. 77, fig. 1), except that the text does not agree with the figure in one respect, the sub-terminal spot on the tail being described as "brownish-red," obviously by a slip. Smith gives the length of the wing as 51 mm., tail 66 mm. In

the south-east, from Durban to Grahamstown, our specimens are smaller than those from Transvaal and Weenen and the rufous coloration has all but disappeared, on the rump and upper tail coverts being olive yellowish, the wings and tail with only a trace of rufous. Dimensions of the adults in the series examined are as follows:

Locality	Males			Females		
	Wing	Tail		Wing	Tail	
		Summer	Winter		Summer	Winter
Boror	—	—	—	(I) 45·5	—	53
Beira (4)	47·5-49	48-53	—	—	—	—
Durban (I)	47	56	—	—	—	—
Pondoland (5)	48-49·5	55-59	70-75	(II) 44-47	49-55	65-73
Weenen (I)	52	55	—	—	—	—
Transvaal (II)	49-54	55-59	70-77	(4) 50-51	—	68-72

It would seem, therefore, that there are three subspecies within our limits, namely, *Prinia mistacea tenella* Cab. in the Lower Zambesi region, *P. mistacea affinis* Smith in the Transvaal and Upper Natal and an undescribed form from the coast of Natal to Grahamstown. The last I propose to name *P. MISTACEA PONDOENSIS* subsp. nov., the type an adult male in summer plumage from Port St Johns, No. 4282 in the Transvaal Museum collection. I nominate Rustenburg as the type locality of *P. mistacea affinis* (Smith), specimens from there agreeing perfectly with the original description, except in respect of the point mentioned above. In the Pondoland series, summer and winter birds are quite readily differentiated, the former being much browner above.

LANIIDAE

As with other small birds, the Shrikes are much in need of special study and re-organisation of their classification. I cannot attempt to deal with the whole family with the poor facilities available to me, but nevertheless offer a few remarks upon species found abroad as well as those of South Africa. It is to be noted that there are northern genera having representatives in the south, but that in proportion to the availability of food, Africa has a very large number of species and consequently genera. We find amongst them species which migrate for thousands of miles and yet with allies migrating only a short distance, and many species, perhaps allied to them, which are strictly local. Those species which migrate the farthest show this in the shape of the wing and shortness of tail, when comparison is made between the species that are apparently allied. The northern, typical, *Lanius excubitor* L., is a partial migrant in the north, but its representative in the south is a resident, and, as I shall presently show, this southern species is as much deserving of generic rank as many other species commonly placed in genera. Again, the northern migrant, *L. minor* Gm., has its representative in the African genus, *Fiscus*. And again the northern migrant, *Enneoctonus collurio* (L.), has its resident representatives in southern Asia in *Otomela*, the most strictly local of which have the longest tails; from the fact that *Enneoctonus* has no representative in South Africa, where it is common, we may assume that it has been driven

to migrate so far south within a comparatively recent period. In north-east Africa we find practically all the groups represented, both residents and migrants occurring there, and an interesting feature of this convergence in a single area is that the long tails of the species indicate which are residents, though they otherwise also show whence they have evolved.

The typical *Lanius* is characterised as follows: first primary a little over half (53 per cent.) of the length of the second, which is shorter than the sixth but longer than the seventh, the fourth longest, the third shorter and the fifth still shorter; the tail is a little longer than the wing, the graduation (that is, the difference between the longest and shortest) of the tail feathers about equal to the length of the tarsus; the outermost tail feather is about as broad as the length of the exposed culmen.

It seems never to have occurred to anyone that the Lesser Grey Shrike (*L. minor*) should be separated from the larger, more sedentary species; yet it is unique amongst the shrikes in the shortness of the outermost primary. Its colour characters leave little room for doubt as to its affinity with the larger species and it is perhaps for this reason that taxonomers have so studiously avoided making use of the primary formulae in the diagnoses of the genera; but if we get down to facts we find that the same character is utilised in the case of other birds which have evolved in the same way and we must therefore recognise the difference. As no name is available I propose for this genus the name of LANIODES, genotype *Lanius minor* Gmelin, characterised as follows: first primary not extending beyond the primary coverts and only about one fourth of the length of the second; second primary longer than the fourth, third primary the longest; tail very much shorter than the wing (about 85 per cent.), the feathers graduated to about the length of the culmen and very much less than the length of the tarsus. Outermost tail feather somewhat narrower than in the typical *Lanius*.

In East Africa, north of the Equator, an aberrant species occurs, which seems also to be allied to the typical *Lanius*, but differs therefrom in having the black feathers of the forehead (which are more extended than in *Lanius*) stiffened and in marked contrast to the grey feathers of the crown; the wing is more rounded than in *Lanius*, the first primary being nearly two-thirds (63 per cent.) of the length of the second, which is shorter than the seventh, while the fourth is longest, the third and fifth a little short of the fourth; tail feathers very broad, always much longer than the wing, although in one form only one-tenth longer but in the typical form about one-third longer; the graduation of the tail feathers is much greater than the length of the tarsus. This subgroup I should also regard as a subgenus of *Lanius*, under the name of NEOLANIUS, genotype *Lanius excubitorius* Prevost and Des Murs.

Covering practically the whole of the continent south of the Sahara Desert we find members of another group, *Fiscus* Bonaparte, genotype *Lanius collaris* L. It is much like *L. minor* in life and may possibly have evolved from it. It differs, however, in some important respects, the tail feathers being narrower and the tarsus having more scales. The first primary is more than half the length of the second (about 60 per cent.), second primary equal to the seventh, third, fourth and fifth about equal and longest; tail always much longer than the wing, averaging about one

and one-fifth (120 per cent.), the graduation of the feathers equal to nearly half the length of the wing.

In East Africa a longer-tailed group has evolved, apparently from *Fiscus*, but differs therefrom in having a bunch of stiff, curved, bristles on the forehead, well illustrated in the *Journal für Ornithologie*, 1869, Pl. III. The first primary is about two-thirds (66 per cent.) of the length of the second, which is shorter than the seventh, while the fourth, fifth and sixth are subequal and longest; the tail is very long, nearly one and a half times the length of the wing, the graduation of the feathers equal to more than half the length of the wing, and narrow as in *Fiscus*. For this subgroup I propose the subgeneric name of *NEOFISCUS*, genotype *Lanius caudatus* Cabanis.

Enneoctonus collurio represents a very distinct genus, differing in colour and structural characters from the true shrikes. Its tail is much shorter than the wing (about 83 per cent.), the feathers much narrower than in *Lanius*, the outermost being in breadth little more than half of and the graduation less than the length of the culmen. Although it migrates for about the same distance as *Lanius minor*, its diet is more strictly insectivorous, and its habits calling for less speed these are reflected in the shape of the wing, the first primary being about one-third (33 per cent.) of the length of the second in those individuals which migrate farthest south.

I have not seen a specimen of *L. gubernator* of West Africa, which some authorities have associated with this genus; but I suspect that it is more closely allied to *L. minor* than *Enneoctonus*, having perhaps developed in the same way as *L. vittatus* of Southern Asia. The Wood Shrike apparently represents a distinct genus, *Phoneus*, which is confined to north of the Equator.

The Asiatic Shrikes, which do not occur in South Africa, are sometimes separated from *Lanius* under the name of *OTOMELA*, typified by *L. cristatus*. I have examined specimens of the genotype and another species of the genus and the following characters were noted: first primary more than half (55 per cent.) the length of the second, which is about equal to the sixth, while the third and fourth are subequal and longest; the tail is of about the same length as the wing, or a little longer, the outermost feather in breadth about equal to the length of the culmen, the tips less rounded than in *Fiscus* and the graduation nearly equal to the length of the tarsus. As one would expect after comparison of species in other genera and families, these characters indicate local migration or evolution from a migratory ancestor. Three species are said to occur in North-East Africa, whence they would seem to have radiated from Asia. In East Africa there is a resident species which has been allocated to a genus by some authors, *Corvinella corvina*, which I have not been able to examine, that may prove to have evolved from *Otomela* in the same way as *Neolanius* and *Neofiscus*. It has a very long tail, more than one and a half times the length of the wing. Sclater, in Shelley's *Birds of Africa* (v. 239) has placed *Lanius souzae* of Angola in the genus *Corvinella*, apparently on colour grounds, although the tail is much shorter than in the type species and it can hardly be correctly allocated in the genus. All the species of *Otomela* found in Asia and the islands to the south should be more carefully studied and it will be found that the local species invariably have longer tails than the

migrants, notable examples of which are to be found in the island species *L. bentet* and *L. longicaudatus*.

In the genus *Fiscus*, Selater has recorded *F. humeralis* from Wakkerstroom (cf. *Ibis*, 1911, p. 283), but this is clearly an error, the reference being to *F. pyrrhostictus* Holub and Pelzeln (*Beiträge zur Ornithologie Südafrikas*, p. 97, Pl. II, 1882), which was described from Linokana, Western Transvaal. *F. humeralis* is a much smaller bird.

With regard to the Bush-shrikes, which are commonly placed in a subfamily, *Laniariinae*, there are several genera which might well be removed to distinct subfamilies, the fact that they occur in forests side by side with the *Laniariine* shrikes, and have consequently developed fluffy plumage or yellow coloration, having little value when compared with the structural differences. *Nicator*, for example, has a semicircle of long bristles in front of the eye, a peculiar figure, distinct type of colour markings and altogether distinct habits (apart from the fact that it inhabits dense forests). *Urolestes* of the dry thorn forests is also quite distinct in many respects, the young, in particular, being black with long tails when they leave the nest, distinguishable only from the adults by their glossier appearance. The bill is sometimes slightly notched and for that reason the genus is placed in the typical subfamily of *Lanius*; but apart from this character, the fluffiness of the plumes of the back is like that of the Bush-shrikes, to which the genus might just as well have been referred. I think, however, that it should be placed in a subfamily of its own, by which course any misplacing of its phylogeny will be obviated.

The *Laniariine* shrikes appear to me to be not far removed from the *Laniine* shrikes, *Laniarius* having a distant resemblance to *Lanius* and the red-wing shrikes likewise a distant resemblance to *Enneoctonus*, the structural and colour differences being what one would expect from the nature of their environment. *Dryoscopus* has also a likeness to the true shrikes, but the extraordinary fluffiness of the plumes of the back is a very distinct character. *Laniarius* contains two very distinct groups within our limits, *L. atrococcineus* representing the typical group and *L. ferrugineus* Gmelin another, which I propose to place in a new subgenus, DIPLOPHONEUS, characterised by its plainer coloration. +

The Transvaal Museum possesses a very long series of the forms of *L. ferrugineus*, and in elucidation of the forms found within South African limits, the following diagnoses are put forward; but first it may be stated that in the Cape Province the adult males are readily distinguished from the northern ones by their sexually dimorphic character of having the breast and throat white in contrast to the lower parts of the body, those from the Zambesi being alike in the sexes in coloration. In juvenile specimens much the same change is to be seen as in the adult females, and they can be distinguished from adults by having the bill brown, or the base of the mandible paler instead of completely black. In Shrikes, the female is usually more liable to specific change than the male, and in this genus we find the forms conforming to this character. I cannot bring myself to consider specific distinction on the evidence available, since the bush which the birds occupy is more or less insufficiently isolated to permit of the evolution of distinct forms; and the evidence of the material is in support. Yet, on the other hand, material is lacking from a great stretch

of country lying between the Transvaal and the Zambesi, and I know from personal experience that the call-notes of the birds in the two regions mentioned are decidedly different.

Laniarius ferrugineus ferrugineus Gmelin.

Specimens examined from Cape Town, Paarl, Knysna, Zuurberg and Grahamstown, in the Cape Province.

Males are blue-black above, white on the throat and breast, in strong contrast to the rufous belly and under tail-coverts; the breast has an underlying buffish coloration, which is, however, hardly noticeable, the white general effect being very marked. The female is olive-brown above, with a darkening under the eyes to the ear-coverts to almost black; the underparts of the body merge from pale rufous on the throat to dark rufous on the under tail-coverts. In both sexes the outermost tail-feather has no white tip, though usually a narrow trace of yellowish where it is present in the Zambesi forms. The tarsus is long (33–34.5 mm.), the bill deep (height at the nostrils about 10 mm.) and broad when viewed from above.

Laniarius ferrugineus pondoensis subsp. nov.

A long series from Port St John's, Pondoland.

In these specimens the male is similar to the male of the Cape form, though several of them have a yellowish suffusion on the back; in the female the top of the head and back are very markedly yellowish olive and the dark mark on the sides of the face is almost absent; the immature are similar above to the female. Possibly this form extends northwards along the coastal belt of forests, as there is a single adult specimen from Magudi, a little north of Lourenço Marques, which is somewhat similar. The dimensions of this form are practically the same as in the typical one.

Laniarius ferrugineus natalensis subsp. nov.

Specimens examined from Weenen and Dargle district in Natal uplands.

In this form the male has the underparts paler than in the preceding and the female is rather darker brown above than in the Cape form, the bill is narrower, decreasing to 9.5 mm. in height at the nostrils, and the tarsus on an average is shorter, 31.5–33 mm., the length of wing and tail approximately the same as in the southern forms.

Laniarius ferrugineus transvaalensis subsp. nov.

Specimens examined from Swaziland, Barberton, Lydenburg, Zoutpansberg highveld, Waterberg and Rustenburg districts.

In this form the white sheen on the throat and breast in the male has given way to a buffy rufous, so that it approaches more nearly to the female in coloration, and, on the other hand, the female is black above. The outermost tail feather usually has a narrow white tip. The tarsus is on an average still shorter than in *natalensis*, that is to say, 29.5–32 mm., the bill weaker (height at the nostrils 8.5–9 mm.) and the tail shorter than in the next form, namely, males 90–98, females 85–94 mm.

Laniarius ferrugineus limpopoensis subsp. nov.

Specimens examined from Lilliput, Njellele River, Mapogone, Malala Drift (Zoutpansberg District) and Manetsi River, S.E. Rhodesia, all situated in the low-country north of Zoutpansberg.

In this form the female is smaller than the male but similar in colour, blue-black above, buffy rufous below, except that the male is slightly paler on the throat. The tail is rather longer than in the preceding form, males 96-105, female 95.

Laniarius ferrugineus mosambicus Rchw.

Specimens examined from Beira and Boror, in the Lower Zambesi region.

This form differs from the preceding in having the outermost tail feathers normally broadly tipped with white, the under parts of the body more evenly coloured from throat to under tail coverts, the former pale pinkish, the latter and the plumes of the rump pale buffy; it is also much smaller, males wing 87-94, tail 88-90, tarsus 29-31; the bill is proportionately smaller, the height at the nostrils only 8 mm.

This form was originally described from Mozambique. *L. aethiopicus hybridus* Neumann was described from Langenburg, East Africa, a little south of Gross Aruscha whence we have specimens, and at the same time it was said to occur southwards as far as the Limpopo; but the latter statement is clearly an error.

Laniarius ferrugineus stricturus Hartlaub.

Ten specimens examined from Lusakas and Machile River, North-Western Rhodesia; this form was originally described from the Lake Ngami region. It differs markedly from all the preceding in having the underparts of the body almost pure white, only a trace of buffy showing on the abdominal region and under tail coverts. The sexes are alike, if correctly sexed by the collector, both in size and colour. It is considerably larger than the Lower Zambesi form, the tail particularly long, the dimensions being: wing 90-96, tail 96-104, tarsus 31-34 mm.

North of our limits other forms are recognised, though there is some division of opinion upon their status, the white mark on the margin of the secondaries being taken for diagnostic purposes and found to be variable. In two specimens from Gross Aruscha the white mark is present, though not so conspicuous as in the southern birds, and in two from Mero Forest appears to be absent. Most likely this character will be found to be inconstant, but more regard must be paid to proper sexing of the specimens and their age, workers having been content to disregard these factors. Unfortunately, our four specimens from German East Africa above-mentioned are not sexed, as I note that they appear to be pairs from each locality, differing in the extent of buffish on the underparts of the body.

The majority of green and yellow bush shrikes are commonly lumped together in the genus *Chlorophoneus*; but Sclater (Shelley's *Birds of Africa*, v. 398, 1912) has placed *C. quadricolor* in *Pelicius*, which is not far from correct as regards phylogeny, but it appears to me to be necessary to place it in a distinct genus, *Pelicius* being a much larger and partly terrestrial genus, *quadricolor* strictly arboreal and smaller. I therefore name the genus CALOPHONEUS, type *Lanius quadricolor* Cassin, characterised by its longer and narrower bill as compared with *Chlorophoneus* and its smaller size, and especially its smaller feet, as compared with *Pelicius*; and as regards colour, characterised by its beautiful contrast of red and green, with a black band around the crop in the male. Another distinct genus, somewhat

connectant between *Calophoneus* and *Chlorophoneus*, is found in *Cosmophoneus*, represented in South Africa by *C. abbotti*, which has been secured as far south as Woodbush. In this genus the bill is also long and narrow, but broad at the base, and in colour it has the throat and chest orange, the forehead, lores and superciliary stripe, like the ear-coverts, black, white or yellow on the forehead being the characteristic of the other genera. In the typical *Chlorophoneus* and two other species which occur within our limits, the bill is short. The three species overlap in distribution, and colour would seem to play a part in preventing their interbreeding. *C. rubiginosus* occurs in the temperate timber forests, from Knysna to Natal and thence northwards at higher altitudes along the eastern escarpment to Nyasaland; *C. sulphureipectus* occurs in the hotter low country as far south as Kaffraria; while *C. olivaceus* occurs side by side with *C. rubiginosus* in the temperate timber forests from Knysna northwards as far as Swaziland. These three species are closely allied, *C. olivaceus* and *C. rubiginosus*, which occur side by side being, so far as our present knowledge extends, indistinguishable when young, while the low-country species, *C. sulphureipectus*, is more highly coloured, as one would expect from the nature of its habitat.

The very large Bush Shrike, *Malaconotus*, is so very distinct in the shape of its bill that it seems to have little relation to the others, the similarity in colour being nothing but the effect of similar environment.

In the red-winged Shrikes we have a clearly marked group of shrikes which frequent a dry, thorn-thicket, environment, characterised as the name signifies by the colour of the wings. No doubt the nature of their environment has played a part in the development of their colour characters; but whether they are so truly related as to be referred to the same genus is not assured, as they differ considerably in the shape of the bill and length of the rictal bristles. I would place our species in four genera, characterised as follows: *Tschagra* Lesson, genotype *T. tschagra*, also known as *Pomatorhynchus* or *Telephonus*, has the bill as long, or nearly as long, as the tarsus, and the rictal bristles very short. *Harpolestes* Cabanis, genotype *P. senegalus*, has a shorter bill and the rictal bristles very long. *Antichromus* Richmond, genotype *A. anchietae*, is smaller than the two preceding and has a shorter and weaker bill, but strongly developed rictal bristles. TSCHAGROIDES gen. nov., type *Telephonus australis* A. Smith, is also smaller than *Tschagra* and *Harpolestes*, but has a short, stout and conical bill and very weak bristles.

In the subfamily *Prionopinae*, two genera are commonly recognised, *Prionops* and *Sigmodus*; but there are at least four genera. *Prionops* is commonly distinguished from *Sigmodus* in text-books on the comparative length of the exposed portion of the bill and the extent to which the nostrils are hidden by the frontal bristles. In the typical *Sigmodus* the base of the bill is exposed; but in *S. retzii* (Wahlberg) the base of the bill is hidden by the frontal bristles, the longer of which extend over the nostrils, and I would therefore place it in a new genus under the name of ERES-SORNIS. *Prionops*, genotype *P. talacoma* A. Smith, has the frontal bristles extending halfway along the bill and completely hiding the nostrils. PHAIDROMETOPON, gen. nov., type *Sigmodus scopifrons* Peters, differs from all other African shrikes in having a bunch of thickened, brush-like, bristles on the forehead, very different from the long, curving, bilaterally

converging, bristles of the other *Prionopine* shrikes; the bill at the base is quite exposed, and it resembles *Eressornis retzii* in colour. *Eurocephalus* and *Nilaus* are associated with the *Prionopine* shrikes on account of the scutellation of the tarsus, but apart from this character they differ widely and their relationship is obscure.

I should arrange the species of South African shrikes as follows:

- Lanius minor* = *Lanioides minor*. Reichenow's species, *L. lubberti* (*Journ. Orn.* 1906, p. 74) from S.W. Africa, can hardly be anything but a synonym of *L. minor*.
- L. collurio* = *Enneoctonus collurio*.
- L. collaris* = *Fiscus collaris collaris* (L.). Southern region.
- L. humeralis* = *F. collaris pyrrhositictus* (Holub and Pelzeln). Highveld region.
- L. subcoronatus* = *F. collaris subcoronatus* (A. Smith). Desert country of north-west.
- Dryoscopus cubla cubla* (Shaw). Temperate region.
- D. cubla hamatus* Hartlaub. Tropical region.
- Laniarius atrococcineus*. Dry thorn forests of tropical west.
- L. (Diplophonus) ferrugineus ferrugineus* (Gm.). Southern region to Kaffraria.
- L. (Diplophonus) ferrugineus pondoensis* Rbts. Pondoland.
- L. (Diplophonus) ferrugineus natalensis* Rbts. Upper Natal.
- L. (Diplophonus) ferrugineus transvaalensis* Rbts. Eastern escarpment bush and western bushveld of Transvaal.
- L. (Diplophonus) ferrugineus limpopoensis* Rbts. Lower Limpopo.
- L. (Diplophonus) ferrugineus mosambicus* Rchw. Lower Zambesi.
- L. (Diplophonus) ferrugineus guttatus* (Swainson). Upper Zambesi.
- Chlorophoneus rubiginosus rubiginosus* (Sund.). (*C. maraisi* W. L. Sclater is a synonym, cf. *Ann. S. Afr. Mus.* III. 380, 1905 and *Ibis*, 1911, p. 289.) Eastern Cape Province temperate forests to Zoutpansberg.
- C. rubiginosus bertrandi* (Shelley). Recorded from Chirinda by Swynnerton (*Ibis*, 1907, p. 48).
- C. sulphureipectus similis* (A. Smith). Dry thorn forests from E. Cape Prov. northwards on east.
- C. olivaceus olivaceus* (Shaw). E. Cape to Natal.
- C. olivaceus taylori* Rbts. (*Ann. Transvaal Mus.* IV. 178, 1914). Swaziland.
- Cosmophoneus abbotti* (Richmond). Recorded by Swynnerton from Melsetter District (*Ibis*, 1908, p. 59) and in the Transvaal Museum collection from Woodbush. (In regard to the name of *manningi*, under which it has been recorded by Swynnerton, cf. Oberholser, *Proc. U.S. Nat. Mus.* XXVIII. 922.)
- Calophoneus quadricolor* (Cass.) Dry thorn forests from Natal northwards in low country.
- Telophorus zeylonus zeylonus* (L.) (cf. Shelley's *B. Africa*, v. 396). South of Tropics.
- T. zeylonus phanus* (Hartert) (cf. *Nov. Zool.* XXVII. 451). Damaraland and Angola.
- Tschagra tschagra tschagra* (Vieill.). E. Cape Province.
- T. tschagra natalensis* Rchw. Natal.
- Harporolestes senegalus erythropterus* (Shaw). E. Cape to Limpopo.
- H. senegalus orientalis* (Cab.) (cf. Oberholser, *Proc. U.S. Nat. Mus.* XXVIII. 809, and Neumann, *Journ. Orn.* 1907, p. 376).
- Antichromus anchietae* (Boc.). Tropical central west.
- Tschagroides australis australis* (A. Smith). Transvaal.
- T. australis damarensis* (Rchw.). Damaraland (cf. *Orn. Monatsb.* 1915, p. 120).
- T. congener* (Rchw.). Lower Zambesi.
- Malacnotus olivaceus* = *M. hypopyrrhus* Hartl. (cf. Shelley's *B. of Africa*, v. 409).

- Nicator gularis* Finsch and Hartl. Tropical coastal forests from Natal.
Urolestes melanoleucus (Jard. and Selb.). Bushveld.
Eurocephalus anguitimens (A. Smith). Bushveld.
Nilaus brubru (Shaw). Bushveld and temperate thornveld.
N. nigritemporalis Rchw. Lower Zambesi region.
Eressornis retzii retzii (Wahlb.). Bushveld.
E. retzii tricolor (G. R. Gray). Lower Zambesi region.
Phaidrometopon scopifrons (Ptrs.). Lower Zambesi region.
Prionops talacoma (A. Smith). Bushveld northwards.

PARIDAE

Sharpe places all our species of true Tits in the genus *Pentheres*; but it seems to me to be better to retain our two species *Parus afer* and *P. cinerascens* in the original genus, separating *P. niger* in a subgenus, for which the name of *Melaniparus* Bonaparte is available, and *P. rufiventris* Bocage into yet another subgenus. The following emendations have been effected in the nomenclature of our species:

- Parus xanthostomus* = *P. niger* juv. (cf. Hellmayr, in Wytsmann's *Genn. Av.* XVIII. 23, 1911).
P. rufiventris rufiventris is recorded from Ovamboland by W. L. Sclater (*Ann. S. Afr. Mus.* III. 379).
P. rufiventris pallidiventris records from Rhodesia refer to *P. rufiventris rooumae* (cf. Hellmayr, *l.c.* p. 23).
P. afer damarensis Rchw. = *P. cinerascens* Vieil. (cf. Hellmayr, *l.c.* p. 23).
P. afer and *P. cinerascens* are distinct species.

REMIZIDAE

I fail to see why the Penduline Tits are placed in the *Paridae*, and therefore raise them to family rank, on account of the finely pointed bill, besides other characters. Hellmayr (in Wytsmann's *Genn. Av.* XVIII. 61, 1911) recognises the Cape Penduline Tit in three subspecies, namely, *Anthoscopus minutus minutus* (Shaw and Nodd.) from the southern region, *A. minutus smithi* (Sharpe) from Transvaal and *A. minutus damarensis* Rchw. from Damaraland. *A. caroli robertsi* Haagner (*Ann. Transvaal Mus.* I. 233, 1909) from the Eastern Transvaal by Hellmayr; but I have more recently shown these to differ from the typical *A. robertsi* of Boror, and have named them *A. caroli hellmayri* (cf. *Ann. Transvaal Mus.* IV. 174, 1914).

NECTARINIIDAE

The collection of Sunbirds at my disposal is a small one, comparatively, but is sufficient to show that the classification of the family is in great need of reorganisation. The arrangement of the genera and species as adopted by various authors is never the same, except when one copies the other, and it is obvious that the fear of creating too many genera is at the root of this difficulty. Their phylogeny is very complex and there is no short-cut method which will lead to a successful issue, examination of small details of structure being unavoidable if we are to place their classification on a sound basis. The structural characters of the wing are to some extent correlated with the colour characters of the males, while colour characters, whether characteristic of only one sex or of both, are of great importance. The greatest difficulty has been the objection to the use of the colour

characters that are found only in the males; but no such objection has been raised in the case of the Weavers, so that the inconsistency of authors in this respect is worth recording. But even without regard to colour, it is still possible to define the limits of the genera, and when we have to deal with the species a knowledge of where they occur is frequently all that is required for purposes of their identification. I shall therefore in the following review point out the essential structural characters and supplement this with an account of the colour differences. *Chalcomitra* Rchb., type *C. amethystina* (Shaw), differs from all the rest of our genera in having the outermost tail feather of the same length as the next one. The genus contains two groups, which for the present may be regarded as subgenera only, the typical one having the throat black like the body and *C. gutturalis* (L.), which has the throat scarlet; for the latter I propose the new sub-generic name of BAPTOTHORAX. Parallel species of the two groups occur far beyond our borders, so that the difference cannot be regarded as a local one.

The remaining species may be divided into two major groups for convenience, characterised by the length of the bill, the long-billed species being those which have the bill measured from the nostrils to the tip longer, and the short-billed species with the bill measured in the same way shorter than the tarsus. The typical *Cinnyris*, into which most of the African species have been thrust, is typified by *C. splendidus* of West Africa, and is characterised by having the tail under two-thirds of the length of the wing, and in this respect differing from the rest of our genera. Of the remaining long-billed genera, *Anthobaphes* Cab., type *A. violacea* (L.), is characterised by having the tail very strongly graduated in both sexes, the feathers narrow and more pointed than in other genera. The next in order of simple identification in both sexes is *Nectarinia*, genotype *N. famosa* (L.), which has the second primary longer than the sixth; the male has the whole of the plumage above and below, in summer, bright metallic green, yellow pectoral tufts and the middle pair of tail feathers much elongated. A number of other genera have been lumped with this genus simply because they have the middle tail feathers elongated in the male, amongst them the totally different *Anthobaphes*. In East Africa *Nectarinia famosa* of South Africa is represented by *N. cupreonitens*, besides which there are two large species occupying separate mountain heights and belonging to another subgenus. In East Africa we find also still more long-tailed genera which seem to be allied to short-tailed genera of the same or adjacent territories, of which may be mentioned, *Hedidipna metallica* and "*Anthreptes*" *venusta*, *Platydiptna platyura* and "*Anthreptes*" *rectirostris*, *Panaeola pulchella* and "*Anthreptes*" *anchietae*. Besides these, there are other long-tailed genera in East Africa, one of which occurs within our limits, namely "*Nectarinia*" *arturi* P. L. Sclater; this genus would seem to be allied to the short-tailed genus, *Aidemonia*, and may be characterised as having the second primary shorter than the sixth and longer than the seventh, larger in size than those with the same wing formula, but smaller than *Nectarinia*, males with the middle pair of tail feathers much elongated and in colour bronzy on a blackish background over the upper parts to the chest, the remaining underparts without the bronzy sheen, and no pectoral tufts. No name being available for this genus I propose to name it SCLATERORNIS gen.

nov., type *Nectarinia arturi* P. L. Sclater. The genus would seem to be represented as well by *S. bocagei* in Benguela, *S. kilimense* in East Africa and *S. tacazze* still farther north-east. *Aidemonia* Rchb., type *A. cuprea* (Shaw), is smaller and the males lack the long central tail feathers; only the type species has been recorded from within our limits, namely, by Alexander (*Ibis*, 1899, p. 555), who secured it on the Zambesi. Another small genus is represented by *Cinnyris shelleyi* Alexander, also obtained on the Zambesi, which differs only, so far as I can ascertain in the absence of a specimen of *A. cuprea* for comparison, in the male, which has the metallic coloured parts green and a broad, bright red chestband; it has the tail only a little more than two-thirds of the length of the wing, whereas in *Aidemonia* it is over three-fourths. As it occupies a position somewhat connectant between *Aidemonia* and the next genus, I propose to separate it under the new generic name of *SHELLEYIA*, type *Cinnyris shelleyi* Alexander. The genus just referred to I propose to name *MARICORNIS* gen. nov., type *C. mariquensis* A. Smith, which differs from *Shelleyia* in having the chest-band maroon instead of bright scarlet in the male, and the tail longer in both sexes, over three-fourths of the length of the wing; the genus is widely distributed and contains large and small species, *mariquensis* of the bushveld and north-westwards being the largest (wing length, 65-72 mm.) and *microrhynchus* much smaller (wing length, 52-57 mm.), the latter occurring side by side with *Shelleyia* on the Lower Zambesi. It will be observed that in the above genera with the second primary shorter than the sixth but longer than the seventh (a character which is found in both sexes), the males lack pectoral tufts and the abdomen is blackish. In the south-west of South Africa, however, and occurring also over the dry west, is another species which has practically the same size and the same wing formula, and the abdomen blackish, but the under-tail coverts white and *orange coloured pectoral tufts*; the length of the tail is between two-thirds and three-fourths of the length of the wing and in this respect it comes close to *Shelleyia*. This exceptional case seems to point to a remote isolation of the species, and instead of a scarlet pectoral band developing as in *Shelleyia*, orange pectoral tufts have developed instead. Were it not for the obvious fact that these birds have been very long established and during their history have come to settle down into groups in which the principal difference lies in the highly coloured males, I should be inclined to place all these with the same wing formula in one genus, and regard the colour characters as being of only subgeneric value; but the species of the respective groups overlap so regularly in the tropics that there is no option but to regard them as genera. Under the circumstances, I must regard *Cinnyris fusca* Vieillot (which is so aberrant that Reichenow places it under *Chalcomitra*!) in a distinct genus, for which I propose the name of *EREMICINNYRIS*, gen. nov.

The remaining long-billed species are all characterised by having pectoral tufts in the males and the second primary equal to or shorter than the seventh, in both sexes. Of these, *Elaeocerthia verreauxi* (A. Smith) is readily identified by its *grey* colour and *red pectoral tufts* in both sexes; the tail is almost square and about four-fifths of the length of the wing. Not far removed from this genus we have another in which the sexes are alike, namely, *Adelinus olivacea* (A. Smith), which differs in being olive

greenish with yellow, or orange-yellow, pectoral tufts and the tail more graduated, though the proportion of length of the tail to the wing is also about four-fifths; it comes near to *Cyanomitra* Rchb., type *C. verticalis* (Latham), of West Africa, but differs in having no metallic coloured patch on the head and the proportion of the length of the tail to the wing greater, in *Cyanomitra* this being less than three-fourths. In the remaining genera, when the colour is grey or olive greenish, this is of females and there are no pectoral tufts.

A fairly widely distributed genus is found in *Cinnyris afer* (L.), which I propose to place in a new genus, NOTIOCINNYRIS, characterised by its relatively large size, second primary rather shorter than the seventh, tail over four-fifths of the length of the wing; to this genus would belong the species *N. ludovicensis*, *N. stuhlmanni* and *N. schubotzi*, the first of which occurs within our northern limits. Widely distributed, and over practically the same ground, is a group of smaller species, which are like the larger in colour, but differ slightly in that the middle tail feathers are rather longer in males and the second primary is hardly longer than the eighth; but the most marked difference is one of size, e.g. wing length in *afer*, irrespective of sex, over 60 mm., in *chalybeus* of the same localities in the largest males not as much as 60 mm.; and again in *stuhlmanni*, according to Reichenow, the wing length is given as 63-64, in *reichenowi* of the same region only 52-53 mm. It is obvious that we have here a case in which we must be guided by the relative difference in size, the lack of structural differences seeming to be due to like conditions of environment having produced the same effects. Under the circumstances I think it advisable to distinguish the smaller group by giving it the name of MICROCINNYRIS subg. nov., type *Certhia chalybeus* L.

Side by side with the last genus there is another group of small species, some of which are even smaller than members of the *Microcinnyris* subgenus; they differ in having the tail less, or not more than three-fourths, of the wing length, males have the abdomen white or yellow instead of grey to brown and the scarlet chest-band is replaced by a narrow band of dark brown. This group I propose to place in a new genus, EUCINNYRIS, type *Cinnyris leucogaster* Vieillot; *C. venustus* and its allies may be tentatively placed in this genus.

Passing now to the short-billed species, we find that all of them have been lumped together in the Asiatic genus ANTHREPTES, typified by *A. malaccensis*. The arbitrary nature of this proceeding must be obvious to anyone handling specimens from Africa, none of them being structurally like the typical species, and I propose therefore to remove them. "*Anthreptes*" *reichenowi* Gunning (*Journ. S. Afr. Orn. Un.* v. 59, 1909) is the plainest coloured species, coming near to *Cyanomitra verticalis* in colour, but differing in having the bill much shorter; this species I propose to place in a new genus, GUNNINGIA, in honour of the late Dr J. W. B. Gunning, whose progressive policy has left an indelible mark in the founding of the large study collection of South African birds in the Transvaal Museum, of which he was the first director. The genus is one of the number characterised by their olive greenish colour, of which *Adelinus* has already been mentioned. Another genus, differing very markedly in colour, is to be found in the plum-coloured Sunbirds, which have the upper parts violet

blue and the underparts white, males with a pale yellow pectoral tuft, and females with the abdomen yellowish besides having the metallic blue only on the upper tail-coverts; the most striking character of this genus is the greater length of the wing, seeming to show an ancestral migratory habit, the difference between the longest primaries and the longest secondaries being more than the length of the hind toe and claw; the feet are stout and the bill is short and only slightly curved, rather broad at the base. Shelley has applied the name of *Cinnyricinclus* Lesson to this genus, with the type species as *C. longuemarii*; but Reichenow applies this to the plum-coloured Starling (*C. leucogaster*) and it becomes necessary therefore to propose a new name: LAMPROTHREPTES gen. nov., type *Cinnyris longmari* Lesson. Finally, *Anthodiaeta* Cabanis, type *A. collaris* Vieill., is markedly different from all the preceding in its very small size, and short and finely pointed bill; both sexes are metallic green above and males differ only in the metallic colouring on the chest and throat.

The species occurring within our limits may be grouped as follows:

Anthodiaeta collaris collaris (Vieill.).

A. collaris zambeziensis (Shelley, cf. Oberholser, *Proc. U.S. Nat. Mus.* xxviii. 926).

Gunningia reichenowi (Gunn.).

Adelina olivaceus (A. Smith). (*C. daviesi* Haagner is a synonym.)

A. olivacinus (Ptrs.).

Elaeocerthia verroxi verroxi (A. Sm.).

E. verroxi fischeri (Rchw.).

Aethocinnyris afer (L.).

A. ludovicensis (Boc.).

A. (Microcinnyris) chalybeus chalybeus (L.).

A. (Microcinnyris) chalybeus subalaris (Rchw.).

A. (Microcinnyris) neergardi (C. Grant) (*Ibis*, 1911, p. 274).

Eremicinnyris fuscus (Vieill.).

Shelleyia shelleyi (Alex.).

Eucinnyris talatala (A. Smith). Cf. Hellmayr, *Nov. Zool.* xxiii. 108, not a synonym of *E. leucogaster* (Vieill.).

E. venustus niassae (Rchw.).

Maricornis mariquensis mariquensis (A. Smith).

M. mariquensis ovampensis (Rchw.). Cf. *Vög. Afrik.* iii. 480, 1904.

M. microrhynchus (Shell.).

Aidemonia cuprea (Shaw). Cf. Alexander, *Ibis*, 1899, p. 555.

Sclaterornis arturi (P. L. Scl.). Cf. *Bull. Brit. Orn. Cl.* xix. 30.

Nectarinia famosa (L.).

Anihobaphes violacea (L.).

Chalcomitra amethystina (Shaw).

C. kirki (Shell.).

C. (Baptothorax) gutturalis gutturalis (L.).

C. (Baptothorax) gutturalis saturator (Rchw.).

ZOSTEROPIDAE

Zosterops vaalensis Gunning and Roberts (*Ann. Transvaal Mus.* iii. 114, 1911) must be added to our list; it occurs side by side with *Z. pallida* Swainson on the Vaal River, and would seem to be allied to *Z. anderssoni*, from which it differs in having light brownish on the sides of the breast; it differs from *Z. pallida* in having the middle of the underparts like the

rest, pale yellow. Since describing it on a single specimen I have collected series of both sexes and different ages and find the colour characters quite constant in both species.

MOTACILLIDAE

The genus in its broadest sense contains a number of groups of species which should long ago have been recognised. These groups can be separated on both structural and colour characters, and I propose to arrange them as follows: *Budytes* Cuvier, type *Motacilla flava* L., characterised by having the tail always decidedly shorter than the wing, the hind claw long, slender and slightly curved; the outermost primary equal to or longer than the penultimate, the fourth much shorter; colour in adults yellow below for the greater part. *Motacilla* L., type *M. alba* L., has the tail of about the same length as the wing, or only very slightly shorter; the hind claw and the toes short; primaries about as in *Budytes*; colour in adults white below. The typical *Motacilla* does not occur within our limits, but it is represented by the resident species, which differ in the wing formula, the penultimate and anti-penultimate primaries being about equal, the outermost and the fourth slightly shorter. Of these *M. vidua* Sundevall is most closely related to *M. alba* in colour characters, but has the base of the primaries white and is considerably larger, so that it may be separated in a subgenus, for which I propose the name of AGUIMPIA subg. nov., type *M. aguimp* Dumont (cf. Mathews, *Austral. Av. Rec.* III. 14, 1915), also known by the names of *M. vaillantii* Cabanis and *M. nigricotis* Shelley. The Cape Wag-tail is of about the same size as the typical *Motacilla*, but has a very plain coloration and the wing formula of *Aguimpia*, and I therefore propose to place it in another subgenus under the name of PSOMOPHILUS, subg. nov., type *M. capensis* L. *M. clara* Sharpe (also known as *M. longicauda* Rüppell, cf. Sharpe, *Hand-list of Genn. and Spp. Birds*, v. 140, 1910) belongs to another genus, possibly allied to *Pallenura* Bonaparte, type *M. cinerea* Tunst., differing in having the tail always much longer than the wing; but it differs from the typical *Pallenura* in being smaller, the wing shorter and more rounded and colour plain grey above and white below, and it may therefore be placed in a subgenus bearing the name of ATOLMODYTES, type *M. clara* Sharpe.

In the large genus *Anthus* of authors, some attention was given by Sharpe to the emargination of the primaries (cf. *Cat. B. Brit. Mus.* x.), but few authors have made use of this character, more attention having been bestowed upon the colour characters. If we trace the groups on the emargination of the primaries, it becomes clear that there is one group confined to Australia and the adjacent parts of Asia, which has only two primaries emarginate on the outer web; to this Mathews has given the name of *Austranthus* (cf. *Austral. Av. Rec.* II. 123, 1915), curiously enough the same name which I had intended to apply to it when working on the group the previous year! In the Palaearctic region and apparently also in South America and Africa is another major group in which three primaries are emarginate, while in Africa and the southern part of Asia occurs another major group in which four primaries are emarginate. The only palaearctic migrant found within our limits is *Spipola trivialis* (Linné), which is characterised by having the underparts of the body heavily

streaked and the tail very much shorter than the wing, when compared with the typical *Anthus* (i.e. *Anthus campestris*, cf. Mathews, l.c.); the outermost primary is the longest, the difference between the tips of the longest and shortest primaries much greater than the length of the tarsus; claws slender, hind claw much shorter than the hallux; bill short; tail about three-fourths of the length of the wing. Not far removed from this genus are two others which are resident in Africa. The first of these I would place in a new genus named CAFFRANTHUS, type *Anthus caffer* Sundevall, characterised by being smaller than *Spipola*, the outermost primary shorter than the second and third, the difference between the longest and shortest primaries about equal to the length of the tarsus; claws weak, short and slightly curved, the hind claw less than the length of the hallux; tail about three-fourths of the length of the wing; colour generally plain, irregularly streaked above and streaked below. The second I would place in another new genus, AFRANTHUS, type *A. brachyurus* Sundevall, characterised by having the tail shorter than in any other Pipit, only about two-thirds of the length of the wing; colour rather darker above than *Caffranthus*, and the underparts slightly streaked on the chest.

The typical genus *Anthus* is represented in South Africa by *A. rufulus raalteni* Layard, which differs somewhat from *A. campestris* in the wing formula, but may be tentatively retained in the same genus. Side by side with *A. rufulus raalteni* we have two larger groups, marking a transition from the African major group. In *raalteni* the outermost and third primaries are about equal and slightly shorter than the second, which is the longest; the fourth primary is slightly shorter than the third, and the second, third and fourth have a distinct emargination; the fifth is much shorter than the fourth and reaches about midway between the fourth and sixth; the hind claw is fairly long and sharp; in size it is smaller than the two other species occurring in the same localities; in colour markings it has obscure streaks above, and on the breast more distinctly striped. In *Anthus nicholsoni* Sharpe the colour markings are practically the same, the main difference being that the outer tail feathers are not so clearly nor broadly white; but the primaries differ as follows: first four primaries subequal, the fifth a little shorter, but much longer than the sixth; the second to the fifth primaries are emarginate on the outer web; claws not as long as the hallux, much curved and slender. The difference between these two species is not very great when one has the specimens in hand, but in the field they are easily distinguished by their call-notes, which seem to indicate that they are not so closely allied as their general characters would seem to show and that the emargination of the primaries is sufficiently important a character to justify separating them into two distinct genera. I propose therefore to place *A. nicholsoni* Sharpe in a new genus, ANOMALANTHUS. The other species is *A. leucophrys* Vieillot, which is more readily differentiated on its consistently larger size, uniform back, absence of distinct streaks on the breast and the wing formula, which is as follows: two outermost primaries the longest (outermost sometimes rather shorter than second), the third and again the fourth proportionately shorter, the fifth still shorter (the difference more than the difference between the fourth and first) and the sixth considerably shorter; the fifth primary is only indistinctly emarginate, not nearly so distinctly

as in *Anomalanthus*, and the hind claw is long and slender, but differs in the species. Members of this group have a distribution quite as extensive as that of *Anomalanthus* and I propose therefore to place them in another genus, *MEGANTHUS*, type *Anthus vaalensis* Shelley. These species need careful revision, based upon material that is not in worn or moulting condition. So far as I can make out from material in the Transvaal Museum collection there are two distinct species, differing in the length of the hind claw and size, the larger having a shorter claw and being distributed over the western area and highveld, the smaller with a longer hind claw and distributed from East Africa on the escarpment and the eastern area as far as the southern region. The southern bird is commonly known by the name of *Anthus leucophrys* Vieillot, or *A. pyrrhonotus* (Vieillot), the latter founded upon Le Vaillant's figure (*Ois. d'Afrique*. iv. 197) which is unrecognisable with certainty. In this species the hind claw is very long, measuring about 11-13 mm. in length, the wing in males 97-100 (rather less in females), the back dark olive brown in colour; in *vaalensis* the wing in males measures 104-107 mm., the hind claw 9-10.5, and the upper parts are altogether lighter, more tawny olive; in *daviesi* the wing is even longer, measuring 110 to 112 mm. in length in males, but in other respects comes close to *vaalensis*, and is therefore to be regarded as only a subspecies for the present; *daviesi* was originally described from Matatiele, but there is also a specimen in the Transvaal Museum from Phillipstown, which would seem to indicate that it is widely distributed. In *Meganthus leucophrys* the outermost primary is usually equal to the next; but in the larger group the outermost primary is shorter than the penultimate as a rule, seeming to indicate that it is a more sedentary species than *leucophrys*, and if such is the case it will very likely have a number of local subspecies. Colonel Meinertzhagen has recently (*Ibis*, 1921, pp. 658-661) given us an account of the species belonging to this genus, but omits to mention *M. daviesi* Rbts. (*Ann. Transvaal Mus.* iv. 172, 1914); he mentions that there is a specimen of "*vaalensis*" in the British Museum from Deelfontein, which is presumably referable to *daviesi*. Amongst the subspecies mentioned by him is *Anthus leucophrys neumanni* of Angola, of which there is a specimen in the Transvaal Museum collection from Okahandja which agrees fairly well with the description. The distinctions between these subspecies are finely drawn and can only refer to the mass, as the shade of colour changes to some extent according to the condition of wear of the plumage.

Passing now to the typical African Pipits, there are three well-marked genera that are readily separated from the preceding. There is always a distinct emargination on the fifth primary and the graduation of the primaries is not marked by wide gaps between the tips, the wing being more rounded in shape. Of these, the species "*Anthus*" *crenatus* Finsch and Hartlaub is characterised by its uniform upper parts and indistinct stripes on the breast and even less distinct lines on the flanks; but the axillaries, the bend of the wing and the outer margins of the primaries are yellowish; the bill is uniform dark brown, differing in this respect from all Pipits; the first four primaries are practically of equal length and the fifth is only a little shorter, the difference between the longest and shortest primaries much greater than the length of the culmen; the tail is about

four-fifths of the length of the wing; the hind claw is slender and curved, but shorter than the hallux. To this group, which contains only one species so far as I know, I propose the new generic name of *PETRANTHUS*, type *Anthus crenatus* F. and H. Another genus is represented in *Cynaidium lineiventris* Sundevall, which is of about the same size as the preceding, but differs in the following important respects: the upper parts are uniformly longitudinally mottled with dark centres to the feathers, and the breast and flanks are heavily striped, while the axillaries, bend of the wing and the margins of the wing feathers are yellowish much as in *Petranthus*; the bill is yellowish below and is broader and stouter than in *Petranthus*; the rectal bristles, which are feeble in *Petranthus*, are well developed in this genus and the hind claw is short and much curved; the proportions of the primaries are much the same as in *Petranthus*, except that the difference between the longest and shortest is not much more than the length of the culmen. It seems probable that these two genera have evolved from distinct branches of the Pipits, and may be of older origin than *Anomalanthus* and *Meganthus*, having perhaps been left behind (like many other animals), on the eastern escarpment and rocky kopjes respectively, when change took place in the climatic conditions of the southern part of the continent. My conception of their relationship is that *Petranthus* is of the same stock as *Anthus* of Europe and *Meganthus* has evolved from *Petranthus* when the conditions of environment underwent a great change; likewise *Cynaidium* would be of the same stock as *Spipola* and *Anomalanthus* has evolved from *Cynaidium*. If we compare the colour characters, besides the shape of the hind claw, it is seen that there is a common likeness which goes to support this view. There is also a common likeness between *Caffranthus*, *Afranthus* and *Spipola*, which seems to point to their being also allied, their divergence perhaps of more recent date than in the other case, seeing that they are of much the same size and three primaries emarginate; the differences which they display can be traced to their habits and habitat, *Caffranthus* inhabiting dry bushveld, where it has trees to settle on, *Afranthus* inhabiting the grass veld area where the climate is moister, and its very short tail enabling it to rise perpendicularly when disturbed, a habit which seems always to produce a short tail.

Still another genus remains to be dealt with, namely, *HEMIMACRONYX* gen. nov., type *Anthus chloris* Sund., which is characterised by its yellow breast and slender toes and claws, which are long and, in common with the colour, remind one of the Yellow Wagtails. It has little in common with the other plainer coloured Pipits and would seem to be allied to *Tmetothylacus*, which differs in having the lower part of the tibia not feathered, and is a link between the Pipits and the Longclaws (*Macronyx*).

ALAUDIDAE

The *Alaudidae*, like the *Motacillidae*, are much in need of reorganisation in their classification; similarity of habits accounts for their plain coloration, and because there are no striking colour differences taxonomers have not paid much attention to their structural characters. The length of the bill and its shape, which are used so much in all birds for purposes of identification, are here variable to some extent in accord with the nature of the soil, as for example in the long-billed larks (*Certhilauda*), tree larks (*Mirafra*)

and a few more. Taken as a whole, however, its shape when correlated with other characters is still a useful character.

In the genus *Certhilauda*, Shelley (*Birds of Africa*, vol. III. 1902), has included *Heterocorys*, *Calendulauda* and *Chersomanes*; while Reichenow (*Vögel Afrikas*, vol. III.) retains in it *Chersomanes*, removes *Heterocorys* to a distinct genus and places *Calendulauda* in the synonymy of *Mirafra*; Sharpe (*Hand-list of Genn. and Spp. Birds*, vol. v.) includes *Chersomanes* under *Certhilauda*, but separates a part of *Certhilauda* under *Alaemon*. These differences of arrangement arise partly from a fear of creating too many genera and for the rest are due to a want of application to a study of the structural differences and the distribution of the species. This genus *Certhilauda* Swainson, type *C. capensis* Boddaert (correctly *C. africana* Gmelin, the name of *Alauda capensis* being preoccupied, as pointed out by Mathews and Iredale, cf. *Austral. Av. Rec.* III. 47, 1915), contains besides the genotype the South African species *subcoronata* A. Smith, *bradshawi* and *damarensis* Sharpe (cf. *Ibis*, 1904, p. 359), *daviesi* Gunning and Roberts (*Ann. Transvaal Mus.* III. III, 1911) and *semitorquata* A. Smith. The North African *Alaemon alaudipes* is not so closely allied as to warrant its inclusion, the similarity of structure being obviously due to similarity of environment; in flight *Alaemon* reminds one very much of the Hoopoe, and it was in fact originally described as a Hoopoe, the whitish bar on the wings and long bill giving this impression. *Chersomanes* Cabanis, type *C. albofasciata* (A. Smith), belongs to an entirely distinct genus, both in regard to voice and structure, the only feature in common being the long hind claw and long bill. Three new subspecies of *Chersomanes* have been described since the publication of Stark's *Birds of S. Africa*, namely, *C. albofasciata arenaria* (Reichenow, *Vog. Afr.* III. 354, 1904), *C. albofasciata erikssoni* (Hartert, *Bull. Brit. Orn. Cl.* XIX. 83, 1907) and *C. albofasciata kalahariae* (Ogilvie-Grant, *Ibis*, 1912, p. 375).

Heterocorys breviunguis A. Smith, is difficult to place; it much resembles "*Mirafra*" *africana*, which occurs side by side with it in the Western Transvaal, but is more likely to be related to *Calendulauda* Blyth, type *C. albescens* Lafr., which differs from both in having the frontal feathers impinging upon and often covering the nostrils. The only distinguishing character of *Heterocorys* that can be relied upon is the short and much curved hind claw. The specific name of *nivosa*, which is commonly applied to the Karroo Lark, was given to a West African bird by Swainson (*W. Africa*, I. 213, 1837), and the description agrees very well with what was subsequently named *erythroptylgia* by Strickland, who was responsible for saying that *nivosa* was a South African bird, on no better grounds than conjecture. Our bird should be known as *Calendulauda albescens* (Lafr.).

Of the Tree Larks (*Mirafra*) of Africa there are several distinct genera which have little in common. The genotype of *Mirafra* is *M. javanica* (Horsf.), which is characterised by its short stout bill, the tail less than two-thirds of the length of the wing, and the outermost primary shorter than the tarsus. *M. chiniana* A. Smith agrees fairly well with this diagnosis and may for present purposes be taken to represent the genus in South Africa. It has the nostrils simple, opening upwards and with a comparatively small superior membrane. *M. fringillaris* Sundevall is not far removed from *chiniana*; but has the outermost primary longer and should

be placed in a subgenus under the new name of NEOMIRAFRA. *M. chiniana* rises high and has a lively tune, in which imitation of the cries of other birds is conspicuous; *M. fringillaris* on the other hand hardly rises higher than the tree tops and its melancholy note of a few syllables is very different. I have found both species breeding at the same time in the same localities.

The Clapper Larks are commonly placed in *Mirafra* too; but they were long ago recognised to be distinct and the generic name of *Corypha* Gray, type *C. apiata* Vieill., was given to them. This name is preoccupied, however, by *Coryphe* in Coleoptera and I therefore propose to name it CROTEOPTERA nom. nov., type *Alauda apiata* Vieillot. In this genus the nostrils are covered by a large superior membrane, the first primary is attenuate, but nearly half the length of the second, the bill short and blunt, its height at the base about half the length of the culmen; in colour characters members of the genus are commonly irregularly barred above. There are two subgroups, members of which sometimes overlap, the typical forms smaller and with a weaker bill, containing *apiata*, *fischeri* and other eastern forms, and the other larger and with a heavier bill, containing *rufipilea*, *rufocinnamomea*, and others of more westerly distribution. *Mirafra damarensis* Sharpe appears to me to belong to this group, though I have not seen an example and cannot be sure. *M. rufocinnamomea* (Salv.) belongs apparently to the larger group, and has been recorded from within our limits by Grant and Sclater, as also *M. zombae* Og.-Grant, which belongs to the smaller group (cf. *Ibis*, 1911, p. 255). *M. adendorffi* Rbts. (*Ann. Transvaal Mus.* VI. 117, 1919) comes near *apiata*.

The large species, *M. africana* A. Smith, belongs to a distinct genus, differing from the preceding in having the plumage striped above, size larger, the bill longer (height much less than half the length) and quite distinct in habits; it may be separated under the new generic name of AFRICORYS, of which the typical subspecies may be taken as the type. It is widely distributed over the continent and a number of subspecies have been recognised, the following from within our limits: *M. africana africana* A. Smith, Eastern Cape Province to Natal; *transvaalensis* Hartert (*Nov. Zool.* VIII. 45, 1900), Transvaal; *grisescens* Sharpe in the northern parts of Transvaal and northwards through Rhodesia, and *pallidior* Sharpe in Ovamboland (cf. *Bull. Brit. Orn. Cl.* XII. 62, 1902).

A smaller species, *M. africanoides* A. Smith has much the appearance of the last; but differs in its shorter bill and smaller size. It is widely distributed like *Africorys* and may be placed in a subgenus under the name of ANACORYS. Pale specimens from Damaraland I have named *M. africanoides harei* (*Ann. Transvaal Mus.* v. 258, 1917).

Another distinct genus is found in the Sabota Larks, which are characterised by the nostrils opening upwards through a protruding membrane, the bill short, strong and the tip rounded like a botanical trowel. To this genus I apply the name of SABOTA gen. nov., type *M. sabota* A. Smith, and would also contain *M. naevia* Strickland.

The three species of AMMOMANES recorded from South Africa have been removed by Bianchi (*Bull. Ac. St Pétersb.* (5) XXI. 232, 1904) to new genera, namely *A. grayi* to *Ammomanopsis*, and *A. ferruginea* and *A. erythrochlamys* to *Pseudammomanes*. Strange to say, none of the South

African Museums possess a specimen of any of these species. Bianchi (*l.c.* xxiii. 205, 1905) has also emended the name of *Pyrrhulanda* to *Eremopteryx* Kaup, of earlier date. The name of *Botha* Shelley (*B. Africa*, III. 104, 1902) has been emended to *Dewetia* (!) by Buturlin (*cf. Auk*, 1904, p. 80). The generic name of *Heteronyx* C. Grant (*Bull. Orn. Cl.* xxi. III, 1908) given to his new species *H. ruddi*, has been amended by him to *Heteromirafra* (*Bull. Brit. Orn. Cl.* xxxi. 14, 1913). This last genus does not appear to me to be separable from *Botha* (= *Dewetia*). *Otocoris berlepschi* Hartert (*Journ. Orn.* 1890, p. 103) should be included in our list until evidence is forthcoming that it did not come from Kaffraria as stated on the label. It is remarkably different from other species of the genus, which might be expected, having regard to the distance separating Kaffraria from the normal range of the genus. It has been given the generic name of *Otocorydopsis* by Bianchi (*l.c.* xxv. No. 2, 1907).

Calandrella might be divided according to Dr Sharpe's arrangement, *Tephrocorys* for *C. cinerea* and *Spizocorys* for *C. conirostris*, *C. starki* and *C. sclateri*; subgeneric division of *Spizocorys* might be considered, as the species differ in the shape of the bill. To our list must be added *Spizocorys sclateri capensis* (O. Grant, *Ann. S. Afr. Mus.* xiii. 41, 1913). *S. conirostris* specimens from Damaraland are smaller and much paler than typical specimens from Transvaal, and I therefore name this race *S. CONIROSTRIS DAMARENSIS* subsp. nov. The type is an adult male from Ondonga, taken by the late Lieut. C. G. Finch-Davies, 1 March, 1917, No. 12291 in the Transvaal Museum collection. The following colours were noted by Lieut. Finch-Davies: "Bill pink, eyes dark brown, legs flesh pink." Length of wing 71, tail 39, tarsus 17, culmen 11 mm. The underparts of the body are almost pure white instead of yellowish brown, and the rest of the plumage is proportionately pallid.

FRINGILLIDAE

The three sparrows commonly placed together under *Passer* should be separated, the monomorphic species *Passer griseus* being placed in a distinct genus, *Pyrgitopsis* Bonaparte, genotype *Pyrgita diffusus* A. Smith and the other two as subgenera of *Passer*. *Passer motitensis* (A. Smith), though having the colour characters of *Passer domesticus* (the genotype of *Passer*) differs very markedly therefrom in its massive bill, and may therefore be placed in a new subgenus, MEGAPASSER; *Passer melanurus* (St Müll.) has the bill of the same size as *Passer domesticus*, but differs markedly in colour characters and may therefore be placed in a new subgenus, CAFFROPASSER. *Corospiza simplex* of East Africa differs from *Caffropasser* and *Passer* in colour and size. Bannerman (*Ibis*, 1915, p. 654) has shown that South African specimens of *Pyrgitopsis griseus* should bear the subspecific name of *diffusus* A. Smith.

The Serins furnish good examples of the effect of environment upon structure and colour; but from the point of view of the taxonomer their division is not so simple. The genus *Spinus*, with two species, *S. tottus* of the southern region and *S. symonsi* Rbts. (*Ann. Transvaal Mus.* v. 257, 1917) of the Drakensberg, and *Alario alario* of the south-west are readily distinguished, the first on the shape of the bill and the second on colour; but I am convinced that *Alario alario* is not far removed from *Serinus angolensis*, the difference between them being accounted for by their

environment. This shows how necessary it is to exercise judgment in forming one's conclusions, since either colour or structure may change to such an extent that it is easy to be misled; to my mind, wide divergence from type indicates the conditions of environment and period of time under which the species have been under its influence. Our Serins, apart from these two genera, may be grouped as follows: *Serinus* Koch, type *Fringilla serinus* L., contains four subgroups in the species *S. canicollis* (Swainson), *S. scotops* (Sundevall), *S. mozambicus* (Müll.) and *S. angolensis* (Gmelin). The first would seem to have radiated southwards together with *Spinus* from the Palaearctic region along the eastern escarpment, and to have become very distinct in the southern region, subsequently radiating northwards again to near the Tropic of Capricorn. It differs from *Serinus serinus* in its relatively larger bill, shorter tail and style of coloration, the crown being golden yellow, underparts of the body yellow and grey on the sides of the neck. I propose to make it the type of a new subgenus, PRONOSPIZA, type *Serinus canicollis* (Swainson). In the eastern escarpment forests is another species, which differs in being more greenish and heavily streaked below and the wing shorter, both characters due to the effect of environment and sedentary habits; I propose to place this as another subgenus under the new name of DENDROSPIZA, type *Serinus scotops* (Sundevall). In the low country on the eastern tract from Kaffraria northwards, the place of these two is taken by *S. mozambicus* (Müller, cf. Iredale, *Ibis*, 1918, p. 242), which I propose to place in another subgenus, MICROSERINUS subg. nov., of which it will be the type; it differs from the two preceding in size and colour, from *Pronospiza* in its less forked tail and from *Dendrospiza* in its shorter tail. The fourth subgenus I propose to name OCHROSPIZA, type *S. angolensis* (Gmelin), which differs from the preceding in having yellow only on the rump, the underparts white with a black smudge on the breast and dark obscure streaks on the flanks; in size it is still smaller than *Microserinus*, the bill is shorter, the tail shorter in proportion to the length of the wing and normally the primaries are longer; all these characters can be attributed to the dry conditions of its habitat. There is an overlap of these subgenera wherever the conditions of environment overlap, and as their distribution extends over the continent we find species evolving, of which *Alario* would seem to be one, and if so must be regarded as only a subgenus of *Serinus*.

Passing now to a plainly coloured genus in which yellow pigment is not developed, namely *Poliospiza*, type *P. gularis* (A. Smith), it would seem that this genus also originally found its way southwards along the eastern escarpment, but practically died out on the Drakensberg, leaving only *P. leucoptera* Sharpe in the southern mountains; but with the change of conditions some individuals were able to survive by adapting themselves, of which we have evidence in *P. gularis* that is widely dispersed to-day, and *P. mennelli* Chubb which has adapted itself to the fertile Lower Zambesi valley. As might be expected, these three species differ in structural characters, *P. gularis* having a narrow bill and longer wing, *P. leucoptera* has a heavier bill, generally darker colour and shorter wing, and *P. mennelli* has somewhat intermediate characters of structure and in colour stronger contrasts of black and white, such as is to be expected in the conditions of climate of the Lower Zambesi as compared with the southern Cape moun-

tains; in *P. mennelli* the tarsus is shorter than in the other two, and if all the Serins be compared it will be seen that those of the south-western districts all have a longer tarsus and stouter feet than the species of the east and north-east, probably due to the sandy conditions of soil in the south-west. I feel I cannot avoid subdividing the genus and therefore propose to place *P. leucoptera* (Sharpe) in a new subgenus, LORMARINSIA, and *P. mennelli* Chubb in a new subgenus, MENELLIA. *P. albifrons* (Sharpe) belongs to this genus, but represents another subgenus, characterised by its still more powerful bill, in the mountains of East Africa.

The next genus is *Crithagra* Swainson, type *Serinus sulphuratus* (L.), which is characterised by its powerful bill. Here we find the same effects of environment upon the species, the eastern being more or less greenish or yellow, the western plain grey and white, with only a little yellow on the rump. The typical *Crithagra* is yellowish green on the chest, forming a semicircle round a yellow throat patch, the abdomen and under tail coverts greenish yellow; as we proceed northwards, we find at Woodbush and throughout Central African mountains the greenish of the breast giving way to yellow like the throat and abdomen and the whole tone of the upper parts yellower. In the lower hills, however, we find this bird becoming slightly smaller and clearer yellow and at still lower levels on the littoral the yellowest and smallest representative of the genus occurs. The tropical escarpment mountain form bears the name of *C. sharpei* Neumann (*Journ. Orn.* 1900, p. 287) and the coastal form the name of *C. shelleyi* Neumann (*Orn. Monatsb.* 1903, p. 184). Unfortunately, figures were not given by Neumann to show the difference in size, and in consequence we find subsequent authors placing *shelleyi* in the synonymy of *sharpei*. Swynnerton recorded *S. sharpei* from Chirinda (cf. *Ibis*, 1908, p. 26) and also recorded specimens identified by W. L. Sclater as *S. sulphuratus* and *S. marshalli* from Helvetia, a little north of Chirinda. Ogilvie-Grant subsequently corrected the Helvetia record of *sulphuratus* to *sharpei* (cf. *Ibis*, 1908, p. 280), but said nothing about the record of *marshalli*, which may have been *shelleyi*, as Grant regarded *shelleyi* at that time as a doubtful subspecies of *sharpei*; but in a later publication (*Trans. Zool. Soc. Lond.* XIX. No. 4, p. 308) Grant gave dimensions of the two forms, which he still regarded as only subspecies, namely, the wing length in *sharpei* as 77·5–84 and *shelleyi* 73·5–77·2 mm. Males of the coastal species are extraordinarily like the males of the dimorphous species presently to be discussed, but may be readily distinguished by the rather heavier bill and the yellow of the forehead not meeting in the middle. The western subgroup, *Crithagra albogularis* (A. Smith), besides differing so markedly in colour, has a longer tarsus, the bill slightly smaller and the tail proportionately shorter; I therefore propose to place it in a new subgenus PSAMMOSPIZA.

Occurring over the western area and the south is another genus, represented by *Serinus flaviventris* (Swainson), which has a stouter bill than *Serinus*, but a weaker bill than *Crithagra* and is remarkable for the dimorphism of the sexes. *Alario alario* is also dimorphic and *Spinus tottus* is, to a small extent, so that this character may have some relation to the food supply. It is my conviction that dimorphism arises from the quality and abundance of food available, the male not taking so active a part in the parental duties when there is sufficient food for the female alone to secure

it for the young. In any case, it seems to me not unlikely that the present species has evolved from the same stock as *S. canicollis*, but became adapted to the western dry conditions, *Alario* having evolved from the more northern *Ochrospiza*, which is also an offshoot from the original *Serinus* stock. It differs from *S. canicollis*, not only in its dimorphism and stouter bill, but also in its longer tarsus, and with this combination of characters there is good reason for placing it in a distinct genus, for which I propose the name of *SERINOPS*, type *Loxia flaviventris* Swainson. In the south the difference between the sexes is more marked than in Damaraland, and it seems possible that farther north this dimorphism will give way to monomorphism, evidence as to which would be interesting. The southern birds are darker in general, the rump in the male in particular being hardly yellower than the back; while the female is heavily streaked below. Farther north, in the Orange River valley, the stripes of the female are almost absent and the rump in the male is yellower than the back, both sexes lighter coloured in general; to this species Shelley has given the name of *Serinus marshalli* (cf. *Birds of Africa*, III. 200). In Damaraland the stripes on the underparts in the female are completely absent, yellow becomes more conspicuous instead, and the male is altogether much clearer and brighter yellow; for this form I propose the name of *SERINOPS FLAVIVENTRIS DAMARENSIS* subsp. nov., type from Windhuck, 19 June, 1910, taken by C. Wilde, No. 6593 in the Transvaal Museum collection.

In order to give some idea of the relative dimensions of the groups and species, I have prepared the following table:

	Wing	Tail	Tarsus	Culmen
<i>Spinus tottus</i> *	66-70	50-53	14-15	10
„ <i>symonsi</i>	76	57	15	11
<i>Alario alario</i> *	65-70	45	15	8-9
<i>Serinus angolensis</i>	65-71	43-45	13-14	8-9
„ <i>mozambicus</i>	64-69	40-45	13-16	9-10
„ <i>scotops</i>	65-69	50-54	16	10-11
„ <i>canicollis</i>	73-78	52-60	16	10-11
<i>Serinpops flaviventris</i> *	71-77	53-59	18-19	10-10.5
„ <i>marshalli</i> and <i>damarensis</i>	71-77	53-60	16-17	10-11
<i>Crithagra shelleyi</i>	73-75	52-56	16-17	11.5-13
„ <i>sharpei</i>	83	64	18.5	14
„ <i>sulphurata</i>	79-83	60-64	17.5-18.5	13.5
„ <i>albogularis</i> *	77-81	55-60	18-21	13-14.5
<i>Polioispiza leucoptera</i>	69	58	17	12.5
„ <i>mennelli</i>	80-82	53-58	14-15	11-12.2
„ <i>gularis</i>	76-84	60-69	16-18	12-14

Those marked with an asterisk are found in the sandveld of the south-west; in the case of *P. gularis* the tarsus is also longer on this sandveld area.

With regard to species, *Polioispiza gularis transvaalensis* Rbts. (*Journ. S. Afr. Orn. Un.* ix. 36, 1913) is a synonym of *P. gularis gularis*, according to Sclater and Mackworth-Praed (*Ibis*, 1918, p. 468), who have shown that the type is from Latakoo, and the southern birds, which I took to be typical (following Shelley's statement that it came from "Cape Colony"), have therefore been re-named *P. gularis striaticeps* by them, Swellendam being taken as the type locality. *Alario leucomelaena* Sharpe is evidently an individual variation in the male of *A. alario*.

PLOCEIDAE.

Heliospiza noomeae Gunning (*Journ. S. Afr. Orn. Un.* III. 209, 1907) was based upon two juvenile specimens of *Anomalospiza imberbis* (Cab.). In any case *Heliospiza* is preoccupied by *Helospiza* Baird. I have not been able to compare specimens from different parts of the country and cannot therefore speak to the status of *A. rendalli*. The genus is parasitic like *Vidua serena* (see *Ann. Transvaal Mus.* v. 260, 1917), and Shelley was therefore doubly right in placing it in the *Viduinæ*.

According to Richmond (*Sm. coll. Quart.* II. 345, 1905) the earliest name for the Pin-tailed Widow-bird appears to be *Vidua macroura* (Vroeg). So far, no one has properly classified members of the genus *Hypochera* on the colour of the legs and bill, which are red in one group and white in the other, though the red fades away in the one case after the specimens have dried out. Members of the two groups occur side by side, but the white-billed group is apparently the common one of the east and the red-billed one the common one of the west; the former is also rather larger.

Recent writers have dropped the generic name of *Penthetriopsis* Sharpe (*Cat. B. Brit. Mus.* XIII. 220, 1890) for *Loxia macroura* Gmelin and the allied species *Vidua albonotatus* Cassin, both of which are now commonly referred to *Coliuspasser*; but it is a valid genus, differing from *Urobrachya* in its longer tail and from *Coliuspasser* in its shorter tail. Some writers have separated *Euplectes* Swainson from *Pyromelana* and have placed *Taha* under *Pyromelana*; but the difference between *Taha* Bonaparte, type *Euplectes taha* A. Smith, and *Pyromelana* Bp., type *E. orix* L., is greater than the difference between *Euplectes* and *Pyromelana*. In *Taha* the outermost primary is minute, the second primary equal to the third and longest, and the upper rump plumes in the male in breeding plumage are very nearly as long as the tail; it is also a much smaller bird, and its eggs are unlike those of any other genus of the group, white with black spots. In *Pyromelana* the outermost primary is longer and the second is shorter than the third, and the plumes of the rump do not reach so far back over the tail; its nest is placed between reeds or straight-stemmed weeds and its eggs are immaculate greenish blue. *Euplectes* has been rejected by Oberholser (*Proc. U.S. Nat. Mus.* xxviii. 885, 1905) and replaced by *Hyperantha* Gistel; but the latter would seem to be also preoccupied by *Hyperantha* Mann. (*Coleoptera*), and if so must give place to *Xanthomelana* (misprinted *Xanthomelanae*) Bonaparte, type *Loxia capensis* L. The genus is characterised by its broader tail feathers, which are also proportionately longer than in *Taha* and *Pyromelana*, and the rump plumes not so long as to hide the upper tail coverts in the male in breeding dress. The nest is like that of *Taha*, placed amongst weeds in marshy ground, but the eggs are pale greenish and longitudinally marked with various shades of dark brown and slate. The proportion of the tail to the wing in *Taha* is between 50 and 60 per cent., in *Pyromelana* between 60 and 70, and in *Xanthomelana* over 70. *Pyromelana orix sundevalli* Bonaparte, described from the Limpopo, is admitted as valid by Sclater (*Ibis*, 1911, p. 235). Lönnberg (*Ark. Zool.* XII. No. 3, pp. 1-5) has shown that the earliest name for *P. flammeiceps* (Swainson) is *P. hordacea* (L.). I have described a subspecies of *X. capensis* from the Olifants River, C.P., as *Euplectes capensis macro-*

rhynchus (*Ann. Transvaal Mus.* vi. 117); it has the culmen length over 20 mm., as against not more than 19 mm. in the typical *capensis*, and the whole bill is proportionately very heavy. In specimens from Knysna the culmen measures only 16 to 17 mm. in length, as against 18-19 mm. in *capensis*, and for this subspecies, which is intermediate between *capensis* and *approximans* (the latter with the length of culmen only 15-15.5); I propose the name of *X. CAPENSIS* KNYSNAE subsp. nov., type an adult male in the Transvaal Museum collection, No. 5114. It is a mistake to regard *X. xanthomelas* (Rüppell) as a subspecies of *capensis*, as it is quite readily distinguished by having the primaries wholly dark brown, not margined with yellowish externally as in the subspecies of *capensis* and the mandible is white instead of normally black. *X. capensis approximans* occurs along the Drakensberg as far as Lydenburg District, beyond which its place is taken by *xanthomelas*. The Drakensberg and Woodbush specimens have the culmen of the same length, but in the Lower Zambesi valley the culmen measures only 13.5-14.5 mm., and for the latter I therefore propose the name of *X. XANTHOMELAS ZAMBESIENSIS* subsp. nov.; in the typical *xanthomelas* from Abyssinia the length of the culmen is given by Rüppell as 15.5 mm., the wing as 76, tail 40 (? 50-60), tarsus 20 mm.; the three last dimensions in *zambesiensis* are 67-70, 53-55 and 21-22, respectively, showing that it is in all respects a smaller bird. The type is from Villa Pereira, Boror, taken by Kirby and myself, 25 May 1908, No. 4524 in the Transvaal Museum collection.

The estrildine Finches require careful rearrangement, the genera as at present recognised in text-books being mixed up in a confusing manner. *Lagonosticta* of authors contains at least two genera and several subgenera, which should be recognised to avoid confusion. The typical *Lagonosticta rubricata* Licht. has the second primary usually, though not invariably, thinning towards the tip, *jamesoni* having this feather normally not thinning and *haematocephala* having it as in *rubricata*; again in *L. brunneiceps* the second primary is normally deeply emarginate; but this character is not sufficiently constant to warrant its being taken as the subgeneric character. In the colour of the bill, however, we find the typical *L. rubricata* has it dark blue-black except at the base of the mandible, which is pale; in *jamesoni* and *haematocephala* the bill is wholly dark, but in *brunneiceps* the bill is pale and with dark stripes on the culmen, tomia and under the mandible. In colour *L. rubricata*, *jamesoni* and *haematocephala* have the under tail coverts black, but in *brunneiceps* pale like the abdomen. In the proportions of the tail feathers, in the typical *Lagonosticta* and *L. rhodopareia* the difference between the longest and shortest is greater than the length of the culmen, in *jamesoni* not less than three-fourths of the length of the culmen and in *brunneiceps* less than half. We see, therefore, from these comparisons that *L. rubricata*, *haematocephala* and *jamesoni* are allied, but that *L. brunneiceps* is well marked off and it may therefore be referred to the genus *Rhodopyga* Heuglin, type *R. rhodopsis* (Heuglin). *Lagonosticta* may be separated into several subgroups, but their distribution does not appear to overlap so consistently as does that of *Rhodopyga*, *Lagonosticta* being a temperate climate species, whose place is taken in the hotter low-country of the east by *haematocephala*, and in the drier west (and even overlapping on the east) its place is taken by *jamesoni*. I have

not seen an example of *L. nitidula* Hartlaub, but its description seems to indicate that it belongs to a different genus; it has been recorded from within our limits by Sclater (*Ann. S. Afr. Mus.* VIII. 368). *L. rhodopareia haematocephala* Neumann (*Orn. Monatsber.* 1907, p. 168) has been recorded from within our limits by Sclater (*Ibis*, 1911, p. 229).

The genus *Hypargos* Rchb., type *H. margaritatus* Strickl., contains several natural groups, placed together because of their having large white spots on the underparts of the body; but *Hypargos* is characterised by having a rounded form of wing, the first primary quite large, the second falling short of the third, which again is much shorter than the fourth, while in *Estrilda nitidula* Hartlaub, which has been commonly lumped in this genus, we have the other extreme, the first primary minute and the second very little short of the third and fourth. The latter is a smaller bird as well, with a shorter tail in proportion to the length of the wing, a smaller and weaker bill and very different style of colour. I had intended to name a genus for this species, but have been anticipated, I am pleased to note, by Dr Hartert, who has recently given it the generic name of *Mandingoa* (cf. *Nov. Zool.* XXVI. 147, 1919). *Hypargos margaritatus* has been re-discovered at Coguno, near Inhambane, by C. Grant (cf. *Ibis*, 1911, p. 230).

"*Pytelia*" *melba* (L.) should be referred to the genus *Zonagris* Cab., of which it is the genotype, on its narrower bill.

Authors have differed with regard to the limits of the genus *Estrilda* Swains., type *Loxia astrild* L. The typical species has a brown to pink plumage, profusely rayed with brown, a red and comparatively short bill, long and slender claws and the tail always longer than the wing; it builds a large nest of dry grass stems, warmly lined with feathers and other soft material, round in shape, but with the forepart sloping and converging to a point at the entrance, which closes automatically; it is placed on the ground, as a rule, under broad-bladed weeds, a bare patch on the ground in front of the entrance usually showing where it is, and there is usually a rough hood over the top, forming a rough chamber, which is sometimes occupied by the male, but seems to act rather as deception to would-be intruders, the proper nest being guarded by the tightly closed entrance. *Estrilda erythronota* (Vieillot), genotype of *Brunhilda* Rchb., superficially resembles *E. astrild*, but differs in having black cheeks, more black than brown in the general coloration, a black and longer bill and shorter, stouter claws; its call-note is quite distinct from that of *Estrilda* and it is more arboreal in habits; its nest is placed high up in a tangled thorn-tree and resembles that of *Estrilda* in the body of the nest, but has the entrance protruding downwards, like the nest of *Hyphanturgus ocularius*. In my opinion it should be regarded as a distinct genus.

Estrilda subflava (Vieillot), genotype (by elimination) of *Neisna* Bp., has the plumage more orange coloured, the bill with a dark line on the culmen and keel, but otherwise as in *Estrilda*, the claws very weak and short and the tail very much shorter than the wing; its nest is usually a re-lined nest of some weaver or viduine finch. I consider this also to be a distinct genus. *E. incana* Sundevall differs so completely from *Estrilda* that I cannot understand why it has remained so long associated with it. It is for the greater part grey in colour; the bill is dark blue, but shaped as in

Estrilda; the tail is as long, or almost as long as the wing, and the claws are short and stout; its nest is made in the deserted nest of some weaver, or is a domed structure placed in a dense thicket. I propose to erect this species to generic rank with the name of GLAUCESTRILDA, type *E. incana* Sund. *E. angolensis* (L.) is referable to the genus *Uraeginthus* Cab., characterised by its pale blue breast, long and pointed tail and the second primary pointed at the tip. *E. granatina* (L.) is referable to the genus *Granatina* Sharpe, characterised by having a different style of colour pattern, the tail still longer than in *Uraeginthus*, but the second primary normal in shape. The nests of the two last genera are said to be globular structures of dry grass stems, with an open entrance at the side, placed in thorn trees at no great height from the ground. *E. dufresnei* (Vieillot) is referable to the genus *Coccyphygia* Rchb., characterised by its peculiar style of coloration, the bill black above and white or yellowish below; in the proportionate length of wing and tail it does not differ much from *Mandingoa*. Its nest is like that of *Estrilda* in shape and composition, but is placed amongst the matted twigs of trees. *Spermestes nigriceps* Cassin has been removed to the genus *Lepidopygia* Rchb. by Oberholser (*l.c.* p. 882), with which I concur.

Cryptospiza reichenowi (Hartlaub) has been taken at Vumba by P. A. Sheppard, to whom the Transvaal Museum is indebted for specimens.

Coccyphygia kilimensis Sharpe was recorded from Gazaland by Swynerton (*Ibis*, 1908, p. 20). Shelley (*Bull. Brit. Orn. Cl.* XIII. 75, 1903) has given South African specimens of *Neisna flava* the specific name of *clarkei*, which we should use in the status of a subspecies.

In regard to the weavers, the material at my disposal does not represent sufficient of the species found beyond our limits to arrange the groups in their full natural order; but, nevertheless, the South African species fall into quite natural groups which I shall presently discuss. The fact that two species may look extraordinarily alike, males having black heads for example, such as "*Ploceus*" *tahatali* and "*Ploceus*" *cabanisi*, does not necessarily mean that they are allied, so that arranging the groups on this character is entirely artificial and is not even "convenient," since we should be able to identify the females as well as the males. *Anaplectes* Rchb., type *A. rubriceps* (Sundevall), has been recognised by all authorities as distinct. It has the bill yellow to orange in colour, long and slightly curved on the culmen, the nostrils well in front of the frontal feathers; the outermost primary is less than a third of the length of the second, but longer than the culmen; tail about three-fifths of the length of the wing; tarsi and toes rather short and stout; colour bright scarlet, in males in breeding plumage, over the head, neck, upper back and breast. Its nest is composed of dry sticks, woven into a rough structure with a downwardly projecting entrance, the upper part of the structure with broad leaves interwoven to form a heavy covering impervious to rain. The eggs are blue-green. Its habitat is the forest of the tropics. *Sycobrotus* Cab., type *S. gregalis* Lcht., should also have been kept quite apart from the others, but Reichenow has lumped it with "*Ploceus*," of which it is recognised as a subgenus only. It is characterised by its relatively rounded bill, the culmen curved from the base to tip, nostrils well below the line of the culmen, the cutting edge of the bill whitish, but the rest dark horn blue; legs and feet short and

stout, light brown in colour; the outermost primary is long, more than half the length of the second, and about one and a half times the length of the bill; tail about two-thirds of the length of the wing; colour dark slate or blackish above and yellow below, not subject to seasonal change and alike in the sexes, which are strictly monogamous. Its nest is composed of epiphytic creepers and in shape resembles that of *Anaplectes*. Its eggs are variable in colour. Its habitat is the dense forests of the eastern escarpment and the tropical low country where forests abound.

Hyphanturgus Cab., type *H. ocellarius* (A. Smith). This genus has much in common with the preceding in the shape of the nest, which is composed of strips of reed-blade and has a downwardly projecting entrance. From the preceding genera it may be distinguished by its much narrower bill, which is black; the tarsi and feet are slate blue and fairly stout; the outermost primary is rather less than half the length of the second and about one and one-fourth the length of the culmen; the tail is about four-fifths of the length of the wing; there is no seasonal change of colour, but the males differ slightly in having more black on the head and throat. The eggs are pale greenish, sparingly marked with slate or slate and reddish, and the birds are most usually found in pairs.

Sitagra Rchb., type *S. luteola* Licht., constructs a nest very similar to the preceding, but lays immaculate white eggs. In its structural characters it differs in having a stouter bill; the tarsi and feet are also slate-blue and fairly stout; the outermost primary is about a third of the length of the second and approximately the same length as the bill; the tail is about two-thirds of the length of the wing; the males differ markedly from the females during the breeding season, the fore part of the head and throat being black and the underparts yellow. *Sitagra cabanisi* represents the genus in South Africa.

We pass now to an assemblage of groups in which all of them have the legs and feet light brown; in most of them there is a seasonal change of colour, usually most marked in the males, and their nests do not contain a long, downwardly projecting, tubular entrance, though sometimes there is a slight addition to the entrance which points to the possibility of its being prevalent elsewhere. Until quite recently authors were content to place the black-headed ones in one genus and the rest in another; but this does not by any means show their relationship, and it was by doing this that we find *Sitagra cabanisi* placed side by side with "*Ploceus*" or *Hyphantornis velatus*. The fact that *cabanisi* and *velatus* quite commonly build together in the same trees, but the nests and eggs can be more readily identified than the birds themselves (apart from the colour of the legs), seems to me to show that they are of distinct origin, their similarity being due simply to their subsisting upon the same food in the same environment; it is an extraordinary case of convergence, and having regard to their being both polygamous (at least they appear to us to be so) seems to be a good argument in favour of "genus splitting," as we do not find them interbreeding. I am inclined to place them all under one genus, *Hyphantornis*, and for the present will do so until further evidence is adduced as to the advisability of making finer distinctions for subgeneric purposes and using the present ones for the genera.

Hyphantornis G. R. Gray, type *H. grandis* Gray, is now commonly

regarded as applicable only to the very large island species (cf. Richmond, *Proc. U.S. Nat. Mus.* LIII. 596, 1917) and Iredale and Bannerman have therefore applied the name of PLESEOSITAGRA, type *H. spekei* Heuglin, to the African members of the genus. This genus would contain "*Ploceus*" *spilonotus* and *nigriceps* found within our limits, and the characters of the group are as follows: bill very stout and fairly long, curving only slightly downwards at the tip along the culmen, over four-fifths of the length of the tarsus, which is relatively short and stout; tail under two-thirds of the length of the wing; outermost primary about one-third of the length of the second and approximately of the same length as the culmen, but sometimes as much as one and a quarter times the length of the culmen; males have the face black during the breeding season. In size they are larger than the next group. One species is distributed over the thorn country of the south and west, the other occupies a small territory in the Lower Zambesi region. The eggs are variable in colour.

MICROPLECTES subg. nov., type *Ploceus velatus* Vieillot, differs from the preceding in its smaller size and particularly in its shorter bill, which is less than three-fourths of the length of the tarsus; the outermost primary varies in length, but is usually shorter than the tarsus and about one-third of the length of the second. There are three species or subspecies of this subgenus within our limits, namely *Hyphantornis velatus* in Great Namaqualand and Damaraland, a small paler yellow form, *H. velatus tahatali* (A. Smith) (as to which see Shelley, *Birds of Africa*, IV. 408, this name taking precedence over *auricapillus* Swainson and *shelleyi* Sharpe), a small, bright yellow form, found in the north on the east, and *arundinarius* Burchell (cf. *Oriolus arundinarius* Burchell, *Travels*, I. 464, 1824), for which Shelley has used the name of *mariquensis* A. Smith, which occurs widely distributed over the temperate south, a larger form that is usually light yellowish like the typical *velatus*.

XANTHOPLECTES subg. nov., type *Hyphantornis xanthopterus* Finsch and Hartlaub, characterised by its more arched and attenuated bill, which is about four-fifths of the length of the tarsus and about two-thirds of the length of the outermost primary; the tail is between two-thirds and three-fourths of the length of the wing, the outermost primary about half the length of the second, and the toes are long in proportion to the length of the tarsus. In colour the species found within our limits are very bright yellow all over in the males in breeding plumage, except that the upper part of the throat is chestnut and the primaries are partly brown. Of the two species occurring within our limits, the type species occurs in the Lower and the other (*castaneigula* Cab., which is greenish on the back) in the Upper Zambesi.

Oriolinus Rchb., type *Ploceus subaureus* A. Smith, is one of several groups in which the male in breeding dress has no black on the head or throat, and the female, immature and male in non-breeding dress, more or less dull greenish. This subgenus has the bill stout and evenly arching on the culmen, over four-fifths of the length of the tarsus, two-thirds to three-fourths of the length of the outermost primary; the tail is less than three-fourths of the length of the wing and the outermost primary is two-fifths to half the length of the second; males in breeding dress are dull yellowish all over, the bill dark brown, and the eggs vary in colour. The typical

species occurs on the south-east coastal tract, its place being taken apparently by a smaller and brighter yellowish species in the north-east. The subgenus *Xanthophilus*, type *H. bojeri* Finsch and Hartlaub, is allied to the present one; but differs in having a weaker bill, less than four-fifths of the length of the tarsus, and the males very bright yellow, the head becoming chestnut yellow. In the event of these two names being considered synonymous, *Xanthophilus* takes precedence. Another larger subgroup is found in "*Ploceus*" *xanthops*, which differs in being larger and having the tail three-fourths of the length of the wing.

EUPLOCEUS subg. nov., type *Oriolus capensis* L., resembles the preceding in colour characters, but differs very markedly in its very long and pointed bill, which arches only very slightly on the culmen, longer than the outermost primary and often as long as the tarsus; the tail is normally less than two-thirds of the length of the wing, and the outermost primary less than a third of the length of the second primary. Two subspecies have so far been recognised, the typical one in the southern region and another over the rest of the temperate part of South Africa. "*Ploceus*" *princeps* of Princes Island would seem to belong to the same subgenus, though I have not had a specimen for comparison. Holub recorded "*Hyphantornis olivacea*" from the Upper Zambesi and it seems not unlikely that it is found in Bechuanaland, as it is essentially a dry district species.

Finally, we have in the north-west a very distinctly coloured species, in which chestnut predominates in both sexes, and in this respect differs from all the yellow weavers of the South African region. This is "*Ploceus trothae*" Reichenow (*Orn. Monatsb.* 1907, p. 147), which is said to be allied to "*Ploceus*" *rubiginosus* Rüpp. and would therefore come under *Melanopteryx* Rchw., type *Ploceus nigerrimus* Vieillot, according to Reichenow's latest arrangement, or under *Cinnamopteryx* Rchw., type *Ploceus castaneofuscus* Lesson, according to an arrangement he followed in 1886. Shelley (*Birds of Africa*, vol. iv.) admits both *Melanopteryx* and *Cinnamopteryx* as genera on colour grounds, and places them near *Malimbus*, which Reichenow has kept apart as a genus quite distinct from "*Ploceus*." I have only seen one specimen of "*Ploceus*" *trothae* from Ovamboland and cannot speak therefore as to the value of the above groups, but note that it comes very near to *Pleurositagra* in structure, colour being the most marked difference. In the case of *Melanopteryx nigerrimus* the nest is described as having a protruding entrance and the eggs of all the species described are said to be uniform bluish green, so that it seems advisable to retain this generic name at least; but a reorganisation of all the groups is much needed to establish some definite arrangement.

Oberholser (*Smiths. Misc. coll. Quart.* XLVIII. No. 1, p. 64, 1905) has replaced the name of *Sharpia* Bocage, which is preoccupied, by *Notiospiza*.

Textor Temminck = *Bubalornis* A. Smith (cf. Iredale and Bannerman, *Bull. Brit. Orn. Club*, XLI. 129).

STURNIDAE

Sharpe's arrangement of the Starlings should be adopted for the greater part, the exceptions being the following. I should separate the Black-bellied Glossy Starling (*Phoenicopterus melanogaster* Swainson = *L. corusca* Nordmann, cf. Neumann, *Orn. Monatsber.* 1913, p. 8) under the

name of *NOTOPHOLIA* gen. nov., characterised by its short, broad bill, stout and comparatively short tarsi, and smaller size. The beautiful East African Starlings commonly placed under *Spreo* should be given separate place in a new genus, *LAMPROSPREO*, type *Lamprotornis superbus* Rüppell, characterised by their entirely distinct style of colour, smaller size, absence of a wattle at the gape and entirely different nesting habits, the typical *Spreo* excavating a hole in a bank in preference, though sometimes using a hole in a building, the present genus constructing a nest in a tree, amongst the branches. It does not occur within our limits. *Pyrrhocheira* should be retained for a group of the red-winged starlings, which contains species that are monomorphous and have the tail differing in shape from that of *Amydrus*. The two genera commonly occur and breed in the same localities on the west. *Cinnamopterus tenuirostris gracilirostris* Neumann (*Orn. Monatsb.* 1903, p. 63) appears to me to be referable to *Pyrrhocheira caffra*. Its precise habitat is stated to be somewhere in South Africa, the specimens having been secured by Holub; I find that Holub records having collected *Amydrus morio* in Rustenburg and as Neumann compares the specimens with that species, presumably they are the same specimens. Shelley refers Neumann's name to the synonymy of *Amydrus morio*!

DICRURIDAE

Dicrurus afer (Lcht.) is not a tenable name, as pointed out by Oberholser (*Proc. U.S. Nat. Mus.* xxviii. 919, 1905), as it was not intended to be a new name, but was simply a doubtful identification of the bird with *Corvus afer*. Oberholser has also pointed out that the name of *divaricata* Lcht. should be retained for the smaller, northern form of *Bhuchanga adsimilis* (Bechstein) and that it enters our northern limits, so must be included in our list. It is clear that the square-tailed species should be kept in a separate genus, under *Dicrurus*.

CORVIDAE

Corvus scapulatus = *C. albus* P. L. S. Müll. (cf. Kleinschmidt, *Journ. Orn.* 1906, p. 90).

BUPHAGIDAE

I am pleased to note that Chapin (*Amer. Mus. Nov.* No. 17, 1921) has given a subgeneric name (*Buphagoides*) to the Red-billed Oxpecker (*B. erythrorhynchus*), a course which I had intended to follow, on account of the difference of the eyelids. The two species occur widely over the continent, often side by side.